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ELEMENTS OF ECONOMICS

ELEMENTS OF ECONOMICS

BY

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PREFACE

Economics is a living subject. Its study and teaching require continual reorientation to the facts of a changing society. This is not to any large extent a matter of developing new principles, because the principles of economics appear to have as much lasting power as one has a right to expect in a world where events move at a rapid pace. Rather is it a problem of applying established principles to new situations, extending or modifying them as seems indicated. This is what is attempted in the present volume.

Certain alterations to the standard pattern are introduced. In the first place this book departs from the traditional plan of treating primarily the theory of free enterprise and introducing government control later as a secondary and complicating factor. Free enterprise and control are integrated throughout the book, as they are in the America in which it is written. Whether the American economy ought to be mixed in this manner is a matter of opinion. That it is in fact a mixed economy is indisputable.

Next, the approach which separates theory and problems has been abandoned in favor of combining theory and its everyday applications wherever appropriate. Principles are better understood when they are seen in action. Illustrations are chosen from modern America as far as possible but some refer to other countries and earlier periods. The reader can be assured that the purpose of these illustrations is to drive home theories by giving examples. They are not to be regarded as a set of facts that are to be remembered. An understanding of usable principles should be the primary objective

of an elementary course in economics, not the acquisition of an encyclopedic knowledge of world affairs.

The exercises are intended to be suggestive of what a student might do in a supplementary way as far as his time permits. The purpose of the problems is to stimulate thought and discussion. Both can be amended in the light of local conditions, or they can be omitted altogether if such a course should appear desirable.

Grateful acknowledgments are made to Professors Merton Stoltz and Philip Taft of Brown University, who have read the manuscript and have made numerous suggestions for its improvement. Thanks are expressed also to several business friends who have furnished information or checked portions of the book which deal with their particular fields.

Another obligation is to innumerable students of elementary economics in several universities. These for the most part fall into two groups, those clever men and women who stimulate the teacher and make his work a pleasure, and the persevering class members whose brightest hope is that they may just surmount the border line in examinations, but who in a democracy count like the others and have taught me much about teaching methods that otherwise I might not have known.

A heavy debt is due my wife, Katharine Whittaker, for inspiration and counsel on many points and ungrudging help in the tedious labor of proofreading.

EDMUND WHITTAKER

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ELEMENTS OF ECONOMICS

CHAPTER I

THE PURPOSE, METHODS AND VOCABULARY OF ECONOMICS

THE PURPOSE OF ECONOMICS

According to the Bible, Adam and Eve lived in a garden where everything they wanted lay close at hand. The earth yielded abundantly, apparently without effort on the part of its two inhabitants. Fruit hung on trees, to be had for the taking, a situation that later was to prove disastrous, as we know. Eden enjoyed a warm climate and modesty had not yet been invented, so clothes presented no problem. Apparently the same was true of housing facilities. There were no scarcities in the Garden of Eden and its inhabitants had no need to study economics.

Unfortunately this state of affairs did not continue. After their misadventure with the apple, it was necessary for Adam and Eve to take up residence in a less favored place. Following a natural course of events, the race multiplied and subsistence began to grow scarce. Abram separated from Lot, we are told in the Book of Genesis, because the same land would not support the animals owned by both of them. This need for more grazing land was an early example of an economic problem. Economics studies the problems presented when men have wants which cannot be fully satisfied. They have many wants, while the means of satisfying them are scarce and difficult to secure.

It is true that some of the most vital wants of men can be satisfied without any trouble on their part. Without air men would die very quickly. Fortunately there is plenty and to spare, so that we can afford not only to use all we want

for breathing but can spare some for pets and other animals, allow industrial concerns to use a great deal, and even permit things which we do not like, such as rusting and forest fires, to consume it. There is plenty for every purpose. And plenty, in this case, does not mean plenty in the sense that there is plenty of milk—that is, some for all who are able to pay the price asked for it—but plenty free of charge. Air is an example of what economists call a *non-economic good*, or *free good*, a *good* being anything that satisfies a want.

Air is not alone in this category. Water is plentiful in some places, as certain kinds of tropical fruits are said to be in the islands of the Pacific. Yet frequently it seems that the goods which we want cannot be obtained in sufficient quantities free of charge and so we employ farmers, factory workers and others to produce them. These goods are scarce in the sense that there is not enough of them to go round free of charge. They are called *economic goods*, as distinct from free goods like air. Of course, it has to be recognized that the distinction rests on circumstances as well as on the type of good; a good that is free under some conditions may be in the economic category elsewhere. It is very costly, for instance, to provide air in sufficient quantities for healthful breathing at the bottom of a coal mine.

Robinson Crusoe's economics were comparatively simple. Needing warmth and shelter, as well as food and drink, he had to divide his time so as to obtain the maximum satisfaction open to him in his peculiar circumstances. When the pangs of hunger came upon him on his island, he might be expected to prefer catching fish to constructing a shelter for the night. At first his mind might be fixed on fish, but after he had eaten several fish it might appear to him that gathering a few berries would be preferable to catching another fish. By the time he had eaten his fill, no doubt his thoughts would turn to the provision of a sleeping place. Then, when

clothed to a degree, with something in his stomach and a shelter completed for the night, he might prefer to bask in the sunshine for a while, rather than eat further today or lay in stocks of food for tomorrow. In such a manner, it might be expected that Crusoe would try to attain a maximum satisfaction of his wants with a minimum sacrifice of the resources at his disposal, his labor and the materials available for his use on the island. *Maximum satisfaction of human wants with minimum sacrifice of scarce resources* may be regarded as the aim or objective of economics and, since resources are valued for their power to satisfy wants, the aim may be stated more simply as *maximum satisfaction of human wants*.

In the early days of his island sojourn, Crusoe was master of his simple economy and had no need to trouble himself about the actions of others. But if more shipwrecked sailors were to land on his island, some form of division of labor might appear advantageous. If Crusoe had been a competent marksman, he might have specialized in hunting, while another individual fished, a third made clothes, a fourth built huts, and so on. Yet even this expanded economy, which by comparison with Crusoe's seems complicated, is very simple indeed by the standards of today. In America or any other modern country, specialists of every type produce goods and services of widely varying nature and receive in return money incomes which they are able to spend in acquiring the products of others. Goods which cannot be produced in the home country, or can be produced only at a disadvantage, are brought from the ends of the earth, while home-produced articles are sent overseas in exchange. And not only do people produce goods for trading with each other; they pay taxes to the government in order that it may have money with which to furnish them with an appropriate allotment of other goods, whose nature is such that this particular procedure

seems the best way of securing them. Education and police protection are examples. The attainment of maximum satisfaction of human wants is complicated under these conditions but, in economics, we study the working of this system of satisfying wants, so that we can understand it and, perhaps, improve it.

THE METHODS OF ECONOMIC INQUIRY

Any study requires appropriate methods of investigation. Broadly speaking, it can be said that economists have recognized two approaches. What is called *deduction*, or abstract reasoning, may be mentioned first. On the basis of a known fact, or an assumption that is so widely accepted as to partake of the nature of a fact, we draw certain conclusions. Thus, in studying the causes of immigration, if we assume that there is in human nature an ingredient of selfishness which causes men to choose the more advantageous of two alternatives that are open to them, we may reason that labor will flow from an area where wages are low to one where they are high, and we may regard this as an adequate explanation.

But, secondly, investigation may be by *induction*, or the realistic method. In this procedure, explanations are sought in studies of the facts themselves. In the immigration inquiry, for instance, statistics of the numbers of workers moving both ways may be examined, their occupations, religious affiliations and races noted, as well as information gathered on wage levels in the areas of origin and destination. Perhaps, in the end, it is concluded that immigration is explained partly by wage differences, and partly by such other factors as political and religious persecution, and opposition to compulsory military service.

In the past, there has been considerable argument among economists as to which is the better of these two methods, but nowadays practically all economists recognize that both

of them should be used to supplement each other. As a general rule, it may be said that a conclusion can be regarded as drawn safely only when it appears to be supported by abstract argument on the one hand and known facts on the other. Misgivings should be felt if either of these supports is lacking. An examination of the facts may suggest a conclusion. For example, observation may reveal that there is an unusually large number of red-haired men in a bread line. But, as it seems unreasonable to assume that employers object to red hair, it would be rash to conclude that red-haired men tend to become unemployed on the evidence provided by only one observation. The same is true of the deductive method. Assuming that men are selfish, it may be concluded that very few gifts would be made to a charitable organization that does not publish a list of contributors. However, the facts would have to be checked before such a conclusion could be accepted.

Armed with logical method, we can approach the study of economics with some confidence. If we can understand in general how the world works, we shall not be appalled by its complexity. We shall have learned how to apply our principles to some cases and we can expect them to be effective in explaining others as they come to our notice.

DEFINITIONS

Many of the words that are used in economics are common ones. But in ordinary usage words are frequently employed loosely and their meaning is not altogether clear. It is necessary to give precise definitions. And sometimes in economics words are defined rather differently than in everyday usage. Ordinarily, *demand* means to require, or ask for in a peremptory manner; for example, workers are said to demand a wage increase or an offended politician to demand an apology. In economics a demand means what in common usage is

called a want, expressed by someone who possesses sufficient resources to gratify it. Some of the more important terms used in economics are explained in the following paragraphs. The meaning of others will be described as they are met, later in the book.

Utility

Economists speak of *utility* as the power of anything to satisfy a want. Water has utility, for instance, because it is able to satisfy thirst and wash dishes. Whether the want that is satisfied is good or bad, moral or immoral, is of no significance in this connection. The fact that it is a want is enough for the economist.

Goods

Goods are things that possess utility. It has been mentioned already that there are two classes of goods, non-economic or free goods and economic goods. When goods are mentioned in this book without further description, the reference is to economic goods.

Scarcity

Economic goods are spoken of as being *scarce*. To the economist all economic goods are scarce, although he realizes that some goods are scarcer than others. This is different from the popular meaning, which limits the use of the word "scarce" to goods that the economist would describe as being exceptionally scarce.

Value and price

The power of a good to command other goods in voluntary exchange is spoken of as its *value*. The value of the good, expressed in terms of the monetary unit, is its *price*. The difference between value and price is well seen during a

period when all prices are rising, as during the two world wars. Some goods rose in price more than others. Those whose prices increased more, had higher value; those whose prices went up less, had lower value.

Wealth

A stock of economic goods is known as *wealth*, although some critics have said that to place such a limitation on the meaning of wealth is objectionable, because in ordinary usage many people include non-economic goods also. This is a general difficulty with the terminology of economics and is the main reason for giving the reader these definitions.

If anyone were asked to catalog his wealth, he would probably list not only his material possessions such as his clothes or his house, but also his money, bonds and stocks. To the economist such things as money and bonds are not wealth but merely *claims on wealth*, the real wealth being the goods that the money is able to buy or the corporation property on which the holder of the bond has a claim.

Capital

The word *capital* is used in two ways. One meaning is synonymous with wealth, that is, a stock of goods in existence at a particular time, such as factory buildings or household furniture. The other meaning is the power to dispose of wealth. In this latter sense, we say a man's capital is tied up in a building and we speak of him as lending his capital when we mean that he lends his money to someone else, who then possesses the power to purchase goods, a power that previously had been in the hands of the lender.

Income

Income is used in three ways: the utilities accruing over a period of time, sometimes called *psychic income*; the goods

and services consumed, which yield these utilities, called *real income*; and the money available to buy these goods and services, or *money income*.

Since goods are things that yield utility and, in one of its meanings, capital is a stock of goods, it follows that capital yields income. It is, indeed, capital in this sense *because it yields income*. The good itself is the capital; the utility it gives off or yields to its possessor is the income. A loan of capital in its money sense usually involves the condition that the borrower must make a periodic payment of money to the lender, so the latter is able to speak of his money capital as yielding a money income. Such periodic payments by borrowers to lenders are called *interest* and often are made from the income yielded by the capital that has been borrowed, but not necessarily so.

Production

In economics, *production* means the creation of utility where there was none before, or the addition of utility to a good that already possesses a certain amount. From this viewpoint there are several types of utility. Even the farmer, in growing a crop, does not bring *matter* into existence that was non-existent before. The chemist will tell us that what the farmer does is to rearrange matter, or change its form, with the result that the elements of the air and soil become the crop, or the feed, air and water added to the calf become the beef animal. Utility that is created in this way is spoken of as *form utility*. Obviously not only the farmer but the miller and the baker create form utility. Another type of utility is *place utility*. Wheat in New York has more utility to New Yorkers than wheat in Kansas and the railroad that transports the wheat is said to add place utility. Since in the United States wheat is harvested in July and August and

people have to eat all the year round, it is a useful service that stores the grain from fall to spring or summer. Wheat in spring has more utility than it possesses immediately after harvest. This added utility is called *time utility*. Some economists add another type, *ownership utility*, arguing that in society as it is at the present time in America, goods are more useful after the proper steps have been taken to confer legal ownership. The services of the elevator clerk who makes out a certificate of ownership of stored grain, or those of the lawyer who examines real-estate titles, represents ownership utility.

As economists use the word production, it includes all these meanings. Not only is the farmer who grows the grain spoken of as being productive, but also the railroad man who transports it, the elevator operator who stores it and the clerks who prepare and handle the several certificates of ownership which are used from the time it leaves the farm until finally it is consumed. The banker, by this definition, is as productive as the farmer.

This is not to say that the labor of all these people is *necessarily* productive in the sense of creating utility. Labor of any kind may be unproductive if no added utility results. The farmer may work hard but if a drought destroys his crop he has created no utility and therefore is unproductive. The railroader who carries coal from one place to another where it is wanted *less* instead of more,¹ the operator of a cold-storage warehouse who has kept eggs from one period to another in which they are in greater excess, or the title clerk whose document is so badly drawn that the court declares it to be invalid, are all unproductive.

¹ The English phrase "carrying coals to Newcastle," denoting effort wasted, is explained by the fact that for many years Newcastle was the main source of London's coal supply. A Londoner who carried coals to Newcastle was *destroying* utility, not creating it.

Consumption

Consumption in economics is the final using-up of a good to satisfy a want. Thus bread is consumed by being eaten. Here again there is a difference from the popular usage; commonly people speak of the coal burned in a baker's oven as being consumed but in economics burning coal in a baker's oven is not consumption, it is part of the production process that ultimately results in bread. The bread only is consumed.

Producers' and consumers' goods; producers' and consumers' capital

Having made such a distinction as this between production and consumption, it follows that goods can be classified according to their purpose. Those whose purpose lies in further production are called *producers' goods* or *producers' capital*, a factory building and the machinist's lathe which it contains being examples. Goods intended for consumption, such as bread, are *consumers' goods*, though very seldom are such short-lasting goods as bread spoken of as *consumers' capital*, this term being reserved for goods which last longer, such as furniture or automobiles. In some cases the same good may fall into either class, as a stock of coal that can be burned either in a baker's oven or a house furnace.

Factors of production

Economists speak of the *factors of production* or the *agents of production* to refer to those broad classes of resources which contribute to the production process. Sometimes three of these are designated labor, capital and land or natural resources, but often a fourth is added, organization or enterprise. *Labor* includes all human effort used in the production process, whether the effort is physical or mental. The architect or the manager contribute labor, just as much as the carpenter. *Capital* has been explained already. A full ex-

planation of its usefulness in production must await Chapter 14. All that needs to be said here is that a gardener without tools or a machinist without a lathe produces less than he would if he were able to make use of these aids, so that capital goods can be regarded as productive. *Land*, as the word is used in economics, includes not only what ordinarily is called land but also the resources of the sea, rivers, minerals and forests—in fact all non-human resources. *Organization* or *enterprise* is the designation given to the contribution made to the production process by assembling the several factors and directing the process as it proceeds. This is, in part at least, a form of labor and therefore sometimes it is given the name *labor of management*, or merely included with other labor. But in the economic system that we have in this country at present, the peculiar position occupied by the *enterpriser*, as the organizer of the production process is called by economists, requires that he be looked upon differently in some respects than are other workers.

Care should be taken to avoid regarding these three or four factors or agents as anything more than three or four broad *classes*. Frequently, labor is so specialized that one kind cannot be substituted for another, for example harness makers may be unemployed or underemployed at a time when there is an unsatisfied demand for automobile workers. The same is true of capital goods. If a sewing machine in a shoe factory is out of order, a lathe cannot be used in its place, still less a ship or a steam shovel. Neither can one kind of land or natural resources be used to replace another in many instances. Glass sand cannot be employed instead of copper to conduct electricity because glass is a non-conductor.

Economic law, principle or rule

As in some other fields of knowledge, an economic law or principle is not necessarily invariable. Some economic laws

are invariable, given the appropriate conditions. The law of diminishing returns is an example.² But other economic laws are no more than generalizations from experience, rules which possess a high probability of application but which are not without exception. Gresham's law³ and the principle of comparative advantage⁴ illustrate this type. Both of these depend for their operation on knowledge and self-interest, which may be absent in some instances.

Note regarding definitions

In spite of the fact that economists make special definitions, so that words in economics are given meanings which are different from those of ordinary usage, it is not always practicable to avoid using the words in their common meanings also. A discourse that is couched entirely in technical language is not only uninteresting to all but experts or enthusiasts, but it is pedantic and unnecessary because often the context is sufficient to render the meaning clear.

HUMAN CONDUCT

It would be out of place for an economist to endeavor to duplicate the work of a psychologist by studying in detail the bases of human action. Yet economic study cannot be carried very far without giving this matter some attention. Some understanding of psychology is a necessary part of the equipment of whoever would understand economics. He must recognize that, at least in part, human decisions are *rational* in that the individual who makes them considers the various lines of conduct open to him and chooses that which, for one reason or another, has the greatest appeal. But at times actions are not reasoned in this way but depend on

² See Chapter 8, page 88.

³ See Chapter 17, page 249.

⁴ See Chapter 22, page 311.

individual *habits* or social *customs*. If we had to consider afresh every morning the exact minute to get out of bed, what to eat for breakfast, which train to take to town and what newspaper to read during the journey, much time would be lost and trouble caused. But many of these things we do every day as a matter of course because they are habitual. Customs may be described as social habits, things which the group does as a matter of course, although some other group may behave quite differently. Along with customs go *mores*, or standards of right and wrong, which also vary from one group to another. These differences in customs and standards between one group and another present serious difficulties in a mobile society such as that in America, where individuals move from place to place and often therefore from one group to another. People who move are apt to take their old standards with them, and conflicts arise in the new environment. The Southerner who moves north, for instance, may refuse to accept employment because a Negro is working on the same job, although a native Northerner or immigrant European may raise no objection.

SUMMARY

Economics studies the problems presented by the fact that men have many wants which cannot be satisfied without the expenditure of effort and resources. Its methods are based on abstract reasoning and on the examination of facts. Frequently terms are employed which are in general usage so that these must be given precise definition for the sake of clarity. Some knowledge of the bases of human conduct is necessary.

EXERCISES

1. Make a list of what you regard as your wealth. Distinguish between wealth proper, as defined in the text, and

claims on wealth. With regard to the latter, identify the real wealth on which you possess these claims.

2. Read a newspaper editorial dealing with an economic subject. As far as you are able identify (1) statements made without being supported by argument or evidence, (2) the use of abstract arguments to reach conclusions, and (3) drawing conclusions from evidence (the realistic method). See if such of the terms used as have been defined in this chapter are employed in ways that accord with the definitions here given. List (1) words given their common usage, (2) words given their economic meaning, and (3) words whose meaning you are unable to identify. Do not be discouraged by a result that may appear unsatisfactory. Like the others which appear later in this book, the purpose of this exercise is to teach you, not to examine you. Try this problem again when you have completed your course.

PROBLEMS

1. What *is* your capital? What do you expect your income to be *this year*? Why are the italicized words used in putting these questions?

2. Would you count as productive the labor of individuals who are engaged in smuggling opium for the purpose of making illegal sales to addicts of the drug resident in an area where its sale is prohibited? Why?

CHAPTER 2

ECONOMIC SYSTEMS

FREE ENTERPRISE—THE FREE OR UNCONTROLLED ECONOMY

Traditionally free enterprise has been regarded as the keystone of the American economy. In technical language the system of free enterprise may be referred to as the free or uncontrolled economy, to distinguish it from the controlled economy, in which economic affairs are subjected to a considerable degree of regulation by the government.

In the free enterprise system the agents or factors of production are privately owned. Within limits set by such elements as moral standards, abilities and training, and the availability of opportunities, individuals select freely the occupations in which their labor, capital and natural resources are to be used. Production is directed by whoever has the capacity and desire to do so. The organizers of production, or enterprisers, select the products which they intend to make, with an eye to the wants of consumers as these are expressed in the prices that the different consumers' goods bring on the market. Commonly the enterprisers supplement their own capital, labor and natural resources by bargaining with others for additional supplies of these factors. The income they receive by selling the resulting products on the market is the source from which the labor, capital and natural resources, that are used in production, are paid. Wages are paid for labor, interest for capital and rent for land. Any income that is in excess of what is needed to meet these payments becomes the enterprisers' own income, or profits. When any product is particularly scarce, its price rises and those enterprisers who are engaged in pro-

ducing it reap unusually high profits. After the existence of such profits becomes known, production in this line increases, because not only do existing producers expand their activities but also enterprisers are attracted from other fields. Thus the product becomes less scarce, relative to the demand, and its price falls. On the other hand, if the price of a commodity is unduly low because the market is oversupplied, the enterprisers engaged in producing it make small profits or even suffer losses. They contract their activities and those among them who can move easily to other fields do so. Production therefore contracts and the price rises. Hence there is an automatic adjustment of production to consumer demand. The demands expressed by consumers through the agency of the market are directives to enterprisers as to what is to be produced. The consumer is king, as it were; the enterprisers and the owners of the factors of production—labor, capital and natural resources—are his subjects.

This is the kind of economy that was visualized by Adam Smith, the founder of modern economics, in his famous book, *An Inquiry into the Nature and Causes of the Wealth of Nations*, published in England in 1776. For many years before that date, government regulation of the economy had been the usual practice. It was not believed that individuals could decide properly for themselves what should be produced, or that the machinery of the market was adequate to ensure that workers, landowners and lenders were remunerated at a suitable level. The government laid down meticulous rules on such matters and trade everywhere was carefully regulated. Adam Smith argued that much of this regulation was unnecessary and even harmful, because in its absence individuals would operate the economy better than could the government. He said that self-interest would lead men to select the occupations for which they were best fitted. Market prices would indicate to enterprisers what should be pro-

duced, and those who organized business would have the stimulus of personal gain to promote their efficiency. The lower the enterprisers could keep their production costs, the greater would be their profits, and waste would be reduced or eliminated. Yet, without government regulation, competition between the various enterprisers would ensure that none of them made excessive profits. Instead, the benefits resulting from efficient production would be passed on to the consumer in low prices, in so far as the efficiency was general and not confined to an unusually able or well-informed enterpriser.

Because at that time Britain was particularly interested in foreign trade and this field had been subjected to the most thoroughgoing regulation, Smith gave special attention to it. He declared that in the international sphere the same self-interest which determined the direction of production at home would lead nations to produce the commodities for which their resources best fitted them and to exchange these for the products of other nations. Thus, home trade and international trade were both governed by the free play of self-interest and free enterprise. Government regulation was an anachronism in such circumstances. "The sovereign," or government, said Smith, was "completely discharged from a duty, in the attempting to perform which he must always be exposed to innumerable delusions, and for the proper performance of which no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people, and of directing it towards the employments most suitable to the interest of the society."¹

England followed his advice. Probably Britain in the first half of the nineteenth century, and the United States during the same period, came as near being a working example of a free economy as has existed at any time or place, although no

¹ This statement is taken from *The Wealth of Nations*.

doubt enough of this system is still present, in the America of our own day, for readers to recognize it.

THE CONTROLLED ECONOMY

Directly opposed to a system in which consumption and production are determined by the decisions of innumerable individuals, in response to their own self-interest, is one in which both of these are controlled by the government.

Nazi Germany is an example that comes readily to mind.² Those in authority there utilized the educational machinery of the country to propagandize German youth on what should be consumed and produced. People were taught that automobile roads leading to the frontiers were good and that Jewish plays were bad. Even as between one product and another which were both supposedly good, like guns and butter, the one that those at the head of affairs considered more conducive to the good of the nation was preferred. Men were encouraged to want more guns and less butter. The people having been propagandized in this way, the government was able to order production to go forward accordingly. Motor roads were built, while Jewish plays were not performed. Gun factories were expanded and labor directed into them, while cheap substitutes were sought for butter fat. The result we have witnessed. The Nazi war economy overreached itself and was destroyed.

But it is not inherent in a controlled economy to fail. It may succeed. Thus, the men who presided over the destiny of Soviet Russia in the 1920's decided on a five-year plan of industrial expansion. Labor, capital and natural resources were diverted from the production of consumers' goods and

² Although in this section Nazi Germany and Soviet Russia are grouped together as examples of the controlled economy, there were important differences between them. Thus private property in producers' goods was recognized in Germany under the Nazis, although subject to severe limitations. And, as is mentioned later, in neither of them was control complete.

used for the construction of things like water-power dams and machinery. Even the consumers' goods that were produced were not used entirely within Russia itself; some were sent abroad in exchange for equipment from other countries. At the time the object emphasized in regard to this program was an ultimate increase of the output of consumers' goods. Russia was using its resources in the late 1920's to make tools, it was said, in order that the output of consumers' goods five or ten years later might be greater. But subsequent events have made it evident that there was another objective, that of preparing to resist an attack from the west which the Russian leaders thought highly probable. Whatever Russia's first five-year plan did in the way of increasing the output of consumers' goods at a later date, it certainly helped Russia turn back the Germans when they attacked her in the Second World War. To that extent, it must be considered a success.

Moreover, both the Russian and German examples illustrate the possibility of a government organizing its people to achieve an objective that is to some extent hidden from them, or at least not emphasized. The German people were induced to save for the purpose of acquiring small cars and of constructing roads on which they were told these cars would run, although in fact when the cars were completed they carried soldiers along the new roads in the direction of the frontiers. The Germans were not informed, in the early stages of war preparation, that they should save to buy tanks and build roads to carry armies to the frontiers.³ Sim-

³ The German people were not altogether in the dark. About 1938, the writer of this book was shown a cartoon that had appeared in a German newspaper of the period. It depicted a German who had saved for the purpose of buying one of the new cars. He had received what was supposed to be his car and was lamenting that, although he had assembled and re-assembled the parts several times, always the final article was a tank. The sketch seemed to be a rather clever attempt on the part of the cartoonist to criticize government policy in an environment in which criticism of the ordinary type was forbidden.

ilarly in Russia, when the people were asked in the late 1920's to forego their present consumption in order that more capital goods could be produced, the emphasis was on a future expansion of consumption rather than on war preparation.

Advantages and disadvantages

Clearly, a system of this kind has certain advantages. Not only is it possible for the government to direct the economy toward an objective which those in charge of affairs do not think it wise to disclose to the general public, but also production can be more efficient. In a system of free enterprise, producers often fail to forecast the demand accurately, so that what they have produced fails to find a market at a price which is adequate to meet production costs. This may be avoided if the people are propagandized so that they can be relied upon to want what the government has arranged shall be produced, although even the government cannot escape mistakes where outside factors are concerned, such as weather or foreign governments. A portion of Soviet Russia experienced a serious famine on one occasion, apparently because the planning authorities had not made sufficient allowance for the vagaries of the weather, while the entire world at the conclusion of both world wars was cluttered with war materials that the governments which ordered their production presumably thought might be needed.

In a controlled economy, the government could do such things as employ data supplied by the school system as a basis for inducing or requiring individuals to devote their labor to industries for which they appear well fitted. In this event, personal inclinations or accidental circumstances which have no basis in productive efficiency would not lead young men and women into unsuitable fields. In America in our own day, some people point to the waste that arises in production

because of the existence of free enterprise and advocate more centralized control or government planning. Advocates of free enterprise maintain that a controlled economy would not afford sufficient incentives to individuals for production to be efficient. They say that government administration is wasteful, because government employees have not the spur of payment by results which characterizes private enterprise. On this subject it must be said that, as private enterprise has developed in this country, many business units are so large that they are operated principally by workers who are paid wages and salaries rather than a share of the profits. Elaborate systems of incentive wages and salaries have been devised to meet this situation, plans that in some instances could be used in government service, if the government itself were to undertake production.

Another objection commonly raised to government regulation in this country is that in America party politics and group pressures are so influential that there appears some likelihood that an expansion of government control over the entire field of industry would lead to even greater exploitation and victimization of one group by another than exists under the present system. An authoritarian economy, such as there was in Nazi Germany or as exists now in Soviet Russia, is said by some to meet this objection, because the men who are at the head of affairs are trustees for the whole nation, not for any particular group. Yet in practice, if there are groups of any kind within the nation, almost certainly the supreme authority will be subjected to influences to favor this or that group at the expense of others. Only a classless state, such as was visualized by the socialist, Karl Marx, offers a solution to this difficulty, and even this solution appears to be no more than superficial when it is borne in mind that, however members of the governing group are chosen in the first instance, once they become

members of this group they acquire special interests as members of the group and can be expected to favor these interests. The typical governing group or department seems to organize itself rather vigorously, not merely for the purpose of remaining in office but to make itself bigger and more influential. Aside from the group interest of the government itself, it is in the nature of specialized production, such as we have nowadays, for there to be a multitude of specialized producer and consumer groups, each with interests that at times conflict with those of other groups. Perhaps the difficulty is insoluble, with human nature as it now exists, although the possibility of altering human nature so that self-interest is less important should not be excluded. The dictators of twentieth-century Europe have demonstrated that energetic direction of the educational machine toward changing the outlook of individuals, from babyhood onward, may have very surprising results.

Probably the main reason why most Americans reject complete centralization of control, or authoritarianism, is that they believe it to be incompatible with personal liberty as they understand it. Men would be like domestic animals, the critics feel, trained to want what those who control them design they should have. This would represent a denial of human values which would not be compensated adequately by the opportunity which might exist for anyone who is specially fitted to do so to enter the governing group. Efficiency in production, if it were secured, would be purchased at too great a price in human freedom to be worth while, the critics of the controlled or planned economy say. However, even in America, there are not lacking those who assert that freedom is in fact denied to many people over a wide segment of their lives and that a controlled system may offer new freedoms that would compensate for the loss of old ones. As is pointed out in the next section, the United States by

this time has had considerable experience of what may be called a mixed economy, in which elements of free enterprise and of government control are both present. But America has had no experience of a fully controlled economy and her achievements in both peace and war have been so impressive that foreigners frequently make complimentary remarks on them, and few Americans feel inclined to alter their system radically, purely on the basis of foreign opinions or experience.

THE MIXED ECONOMY

For a reasonably good example of a system of free enterprise, it was necessary to go back to the America or England of a century ago. To exemplify the controlled economy, we spoke of Nazi Germany and Soviet Russia. The reason for such a choice of illustrations is that the economy of modern America contains elements of both free enterprise and government control. Textbooks on economics published before the First World War, and those which appeared between the two wars, for the most part based their exposition on the assumption that free enterprise was the more fundamental factor and that government control was supplementary. During the two world wars, however, to many people it must have seemed as though government control was more significant than free enterprise. In the recent war, a body of literature on war economics appeared, devoted largely to exposition of the principles and practice of government control under wartime conditions. Even in peacetime America, there is considerable government control in the economic sphere, and certainly during the two wars free enterprise has not been absent. For that matter, there was a certain amount of government regulation in the America and England of a hundred years ago, which we chose to illustrate the free enterprise system, although much less than is usual

nowadays. Even Nazi Germany and Soviet Russia have permitted certain choices in what individuals have consumed, in how they have divided their income between consumption and savings, and what occupations they have entered. In practice, therefore, it appears that there are no pure economies, either free or controlled, but only mixed ones. With this qualification, we can say that the economy of England or America a century ago was characteristically free, just as we can regard those of Nazi Germany and Soviet Russia as characteristically controlled. But in the economy of the America in which this book is being written, there is so much of each of the two ingredients that possibly the best description we can give it is to call it *mixed*.

What are the distinctive characteristics of a mixed economy? As the mixed economy has developed in this country, individuals very largely choose what they will consume and produce, but they exercise their choices in a milieu in which government control is very influential. Price differences, which in part are explained by the government's having imposed import duties on goods coming from abroad, encourage consumers to prefer commodities made in this country to those produced abroad. The choice which middle-western farmers made between growing corn and alfalfa in the later 1930's was conditioned largely by the fact that the government offered them considerable sums of money to keep their corn acreages within certain allotments for each farm, and encouraged them to grow alfalfa as an alternative crop. Enterprisers find that the interest they have to pay on borrowed capital, which is an important factor in their decisions regarding the construction of new plants, is influenced by actions taken by the reserve banks, which have been established by the government partly for this purpose and which work closely with the Treasury on such matters. Minimum wages exist here, price ceilings there. Power to

acquire certain commodities has been restricted by rationing and priority systems. The consumption of certain home-produced goods is made expensive by high taxes, and that of others cheap because of the existence of government subsidies. Even the choice of occupation, which in peacetime is nominally free, is influenced by the fact that in some instances technical training is afforded at low rates by educational institutions in receipt of government assistance.

The price system exists as it does in the free enterprise system proper. Goods are produced in response to market prices. Workers, capital owners and those who possess land sell these factors of production for prices, wages, interest and rent, and the incomes they receive from these sources afford them their livelihoods. However, to a large extent not only is the process interfered with by government actions that affect the market, and so influence the amounts of wages, interest and rent that individuals receive, but incomes are altered directly by taxes and by benefits paid in the shape of money or goods. Personal incomes thus are not merely prices that individuals receive for the factors of production that they own and sell; they are these *plus* whatever the government elects to give them in addition, and *less* what it decides to take away in taxes. During the period that has elapsed since the great depression of the early 1930's, there have been numerous Americans for whom these pluses and minuses have been sufficiently large to change very considerably the income picture.

This is the system that is explained in the present book. In the explanations the emphasis at times is on the working of individual choices, at others it is on government action. Many Americans would like the United States to be different. Some would prefer less government control, others want more. The economy is always changing. When America entered the Second World War, control extended very

widely. The restoration of peace witnessed the abandonment of many of the controls. No one can forecast accurately how much government regulation there will be in five years or in ten, or prophesy the forms which the control existing at that time will take. But in general terms we can explain the principles which appear to underlie this intermingling of free enterprise and control sufficiently well to serve for practical purposes during the short term of years that represents the ordinary life of a book such as this—even though the details are always changing and the balance between freedom and control sometimes seems to shift substantially.

THE CONTROLLING POWER

Hitherto in this chapter we have spoken of government control simply. It has to be recognized, however, that in any society control is something much more complex than this implies. An individual is not merely faced with two competing regulatory forces—his own preferences and the rules that are laid down for him by the government. He forms groups with his fellows in all manner of ways. He marries and has children, developing family interests which often transcend the preferences he might have displayed had he remained single. He is a member of a church that states principles for his guidance and perhaps takes measures which he does not like should he choose to ignore these principles. He joins a labor union or an employers' organization and his decisions are limited to some extent by the rules formulated by that body. Whether as an employee or as an employer, his fortunes become attached to those of a particular industry, like coal mining or education, and he is influenced accordingly. As a good Democrat or a regular Republican he knows that he is expected to do and say certain things rather than their opposites. His municipality has its own ordinances, his state its special laws, and the federal government has laws

of its own. All these he is supposed to observe, and penalties which are more or less formidable are provided for disobedience. Often the uninitiated seem to think that the only rules an individual has to accept are laws and that all laws have to be obeyed. But lines of action prescribed by family or church associations, by labor unions or other occupational groups, frequently seem so appealing, or have attached to their non-observation such serious penalties, that they lead individuals to break laws, as is the case when adherents of a particular religious body refuse to serve in the army, or members of a labor union join in an illegal strike. Social rules such as color bars may be observed widely, although such rules have no legal foundation and may indeed be contrary to law, while some laws are not observed because they are out of accord with popular sentiment, as was the prohibition of liquor in this country a few years ago.

It must be remembered that not only the state but other groups use education or propaganda to influence the choices individuals make. Corporations advertise widely and some of their advertising is very effective. Organized pressure groups exist in every city, and they operate in state capitals and in Washington for the purpose of influencing legislation. Thus it happens sometimes that laws purporting to be enacted for the general welfare are in reality based on the selfish interest of a few or are the results of political bargains between several interested groups. The discussion that took place at the end of the Second World War on removing the wartime excess profits tax was enlightening. Those who believed that the tax should be removed, as a stimulus to postwar business expansion, found support at businessmen's meetings and in the columns of financial newspapers. Ranged among the opponents were the labor unions, whose leaders no doubt felt some aversion to profits as such and certainly desired that taxes should be levied in any other direction rather than

imposed on the workers themselves, but also remembered that the existence of an excess profits tax meant in many cases that the government bore a considerable share of the cost of a wage increase and therefore might be expected to reduce the employer's resistance to higher wage demands.

SUMMARY

Free enterprise in the past has been regarded as the keystone of the American economy. In the free enterprise system, the factors of production are privately owned, and the incomes of individuals depend on the prices at which they sell their factors for use in the productive process. Consumer preferences, through the self-interest of producers, determine what is produced.

Opposed to this system is one in which both production and consumption are controlled by the government. People are taught to want what the government intends should be produced.

Although America in the early part of the nineteenth century can be used to exemplify the first system in a general way, and Soviet Russia in our own day the second one, in practice neither of the systems has existed in complete form. There is so much of each of them in the make-up of the existing economic organization of the United States that it can be described appropriately as a mixed system.

PROBLEMS

1. List the main features of the free enterprise system.
2. Write down what you regard as the essentials of a controlled economy.
3. Which of those included in your two lists do you think are present in America now? Which do you think are absent?
4. If you could have your way, how would you change America, and why?

CHAPTER 3

SPECIALIZATION AND EXCHANGE

Exchange would be unnecessary if everyone could produce what he wished to consume. But when we consider the large number of goods used by even a poor person at the present time, obviously it would be impossible for any individual to produce them all. More skills and equipment would be needed than any one man or woman possesses. Under primitive conditions, when wants were fewer and simpler than they are today, men produced much of what they needed. This was true in the early days of settlement in America and it is true today in parts of Asia and Africa. The primitive farm family produced not only its food but materials for its clothes and buildings. Horses were raised for the plow and tallow from animal fat furnished artificial light. Yet even the primitive farmer needed some goods from the outside world, such as tools and salt, and bartered or sold part of his produce for this purpose.

The primitive farmer was very inefficient, judged by the standards of modern agriculture. He was not only unable to devote his land to the particular crop for which it was most suited, but he was also denied the benefits of specialized labor and machinery. Adam Smith attached so much importance to the specialization of labor (which he called *division of labor*) that he made it the topic of the first chapter of his famous *Wealth of Nations*. He commented in the opening chapter, "The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is any where directed, or applied, seem to have been the effects of the division of labour." All

economists since then have agreed that specialization is an important factor in modern productive efficiency.

ADVANTAGES AND DISADVANTAGES OF SPECIALIZATION

Advantages

Specialization permits a man to devote himself to the work for which he is best fitted or for which he has a personal preference. It makes feasible adequate courses of training. It affords the constant practice that adds to the worker's skill. It avoids loss of time in moving from one task to another. It permits specialized equipment to be purchased and kept fully occupied. Association with other specialized workers brings into existence a producing group big enough to make possible the efficient organization of buying, selling and transportation of raw materials and finished goods. Specialized producing enterprises or groups tend to locate themselves in areas which for some reason are most suited to the product, so that trade arises between one locality and another, between one country and another.

Here is operative what economists call the principle of comparative advantage,¹ developed in economic literature with special reference to international trade but having general applicability also. A wheat farmer, for instance, grows only grain because he finds that he can get milk cheaper from a neighboring dairy than by keeping cows himself. He exchanges his wheat for milk through the medium of money. Nations find that it is cheaper to procure from other countries those goods for the production of which the other countries are particularly suited, and to pay for them by exporting products in which they have an advantage themselves. Thus Switzerland supplies mountain scenery and winter sports

¹ See Chapter 22, pages 311-312.

deciding whether or not to go back another time. Many individuals who furnish specialized service in such jobs as house repairing, painting and plumbing, keep a store or home address at which they can receive telephone calls from prospective customers. The prices they charge are governed by agreement between members of the trade or reached in bargaining with their clients, although custom is an important factor. In certain trades dealers congregate in special areas to which buyers resort. The sale of furniture and automobiles is localized in this manner in many cities, with no distinct market place or building. A sharp distinction is drawn in some trades between *wholesaling*, where sales are made to others who resell in the same or altered form, and *retailing*, where sales are made directly to consumers. Usually wholesale transactions are larger than those in the retail trade. There may be separate buildings or districts devoted to the two types, each with its special group of dealers. Some cities have large buildings to house the wholesale or retail trade in fruit and vegetables, such buildings often being owned by the city governments. Private firms and associations of traders also own and operate market buildings; some of the best known markets are so owned. Thus, the New York Stock Exchange with its several buildings is owned by an association of traders.

The market as a trading area

Besides referring to the place where buyers and sellers meet for the purpose of conducting their transactions, the name market is applied to the entire organization of buyers and sellers of a particular commodity, and also to the area that is interlinked in buying and selling, so that the actions of traders in one portion affect prices in another.

A *localized market* exists where, on account of distance and cost of transportation or perhaps because of a prohi-

bitive tax on imports from abroad, prices are affected purely by local factors and are uninfluenced by conditions elsewhere. A *world market* is said to exist where the commodity concerned can move with reasonable freedom from one country to another, and an excessive supply or a severe shortage in one country lowers or raises prices in others. The market for the lawn-mowing services of schoolboys is localized, so that a job which fetches only twenty-five cents in one town may bring a dollar in another. On the other hand, cotton has something approaching a world market; cotton can and does move almost anywhere. But families do not change their residence from town to town because of differences in the price of lawn-mowing. Such differences are apt to be in degree rather than in kind, and markets that are separated almost completely in short periods of time may prove to be linked together in longer periods. For instance, a serious shortage of carpenters may exist in a rapidly developing area, causing carpenters' wages to be high and building repairs to be very costly, while at the same time in another part of the country the reverse is true. Given sufficient time, however, carpenters move into the high-price area, leaving the low-price one, and gradually the price and wage differences become less or even disappear.

Dealers and the marketing process

If a commodity is traced from producer to consumer, it is seen that a number of functions are involved in the marketing process. First comes aggregation or making bulk, as when the small lots of wheat produced by the farmers in a particular locality are aggregated into carload lots at a grain elevator. Then there is grading or the classification of wheat according to its type and quality. Transportation, storage, financing and insurance are all involved, as well as the processing that converts wheat into flour and gives flour in its

turn the form of bread. Breaking bulk is necessary when large lots of flour are divided among several bakeries and when bread is retailed to the consumer. Buying and selling are required at several stages. The enterprisers who perform such functions as making and breaking bulk are in general known as dealers, although sometimes more specific terms like jobbers and hucksters are used. Commonly men who are called dealers perform a certain amount of transportation and storage. Other dealers operate in the market as buyers or sellers, as they think fit, with the object of making a profit from market movements. Such dealers are referred to as speculators. Very often dealers whose primary function is elsewhere, such as in making bulk or storing the commodity, speculate to some extent because they buy more than usual and sell less when they believe a rise in price is in prospect, and follow the opposite course when they expect the price to decline. More is said on this subject in Chapter 4.

Regulation of the market

Although freedom of enterprise implies that a man may choose for himself whether or not he will specialize and that everyone who wishes to enter a market as buyer or seller may do so, in practice such freedom of choice does not always exist. People may be compelled by the government to consume or produce, to buy or to sell or to specialize. Thus, individuals are required to pay for goods through taxation, although they are indifferent regarding the consumption of such goods or even opposed to them. An incident which occurred some time ago, when members of a certain religious sect were prosecuted for refusing to send their children to the public schools, illustrates this situation. In both world wars, men who in ordinary times produced their own food were required to serve as soldiers and eat food grown by

other people. Specialization and exchange in this case were made compulsory. Compulsion has taken the other direction also and restricted specialization. During the depression of the early 1930's and in the Second World War the people of some countries were compelled to subsist largely on home-produced goods, certain imports being reduced or prohibited for the purpose of economizing the supply of foreign money.²

During the two world wars and especially in the second, in the case of many commodities, government regulations specified in detail not merely who was permitted to buy and sell but the quantities that could be bought and sold and the prices at which transactions could take place. Those who wished to make purchases but received no allotments under the regulations, or who wanted to secure goods in excess of their allotments, frequently tried to do so in illegal markets called *black markets*, where sales were made secretly by unscrupulous dealers, often at high prices because of the risks involved. Naturally, black markets thrived most in those commodities whose production and movement to market were difficult to supervise, as in the case of agricultural products which involve a multitude of small transactions all over the country.

Organized markets commonly are regulated by associations of the traders who use them, as well as by the government. Membership in such a market has to be obtained by application and very frequently involves purchasing a share held by an existing member. The New York Stock Exchange is an example. In this case outsiders have to deal through members. In certain markets there is a division of function between traders. Some make purchases and sales for outside clients and are called *brokers*, while others, who are called *dealers*, buy and sell on their own account. The activities of

² See Chapter 23.

these men are sometimes criticized but, under our system, buying and selling are necessary, and brokers have to be compared with specialists in other branches of the economic organization, while dealers may (although not always) perform a useful service in stabilizing price movements in the markets where they operate, as will be shown in the succeeding chapter.

SUMMARY

Our economy is to a large extent specialized. An individual produces only one product, or a limited range of goods; perhaps he contributes but a small and specialized portion of the product. Both advantages and disadvantages attend specialization.

Specialization necessitates exchange of products and this in turn involves a market or meeting ground between demand and supply. Access to the market in some instances is restricted.

PROBLEMS

1. A neighbor suggests to a city business man that the latter should paint his own house to save money. List the advantages and disadvantages of this. Do you think that he would "save money"?

2. A farmer tells you that he sold his potatoes for \$1.50 per hundred pounds. Your mother says she paid 50c for fifteen pounds of similar potatoes. An acquaintance says the difference is explained by the dealers being "a set of thieves." What do you think explains such a difference?

3. You may have heard that additional gasoline coupons were purchased illegally by some motorists during the period of gasoline rationing in World War II. Where do you think that coupons purchased in this way were obtained by those who sold them?

CHAPTER 4

SUPPLY AND DEMAND IN THE MARKET

It is necessary now to examine how a market operates. On the one hand there are a number of prospective buyers who have various ideas regarding the prices they are willing to pay. On the other hand are the sellers, also with their own views. Generally we think of these two groups as opposed to each other in the marketing process, but actually the same individual or firm may be willing to buy under one set of conditions and to sell under another.

THE DETERMINATION OF PRICES

The price is fixed by supply and demand in a process which may be explained by example. Let us consider the relationship between the price of hay in a country market and the quantity of hay taken by buyers in that market, and the relationship between the price and the quantity of hay offered for sale. Table 1 shows these relationships.

TABLE 1. DETERMINATION OF PRICE IN A MARKET, 1

Price per ton \$	Quantity taken by buyers tons	Quantity offered by sellers tons
16	60	2
17	54	12
18	48	22
19	43	30
20	40	37
21	39	42
22	38	45
23	36	60
24	33	80

The quantitative relationship existing between a particular price and the amount buyers will take at that price is sometimes referred to as the *demand at that price*, while the quantitative relationship between a price and the amount sellers offer is called the *supply at that price*. A table, setting forth against each price the quantity buyers will take, is called a *demand schedule*, and a similar table showing against each price the quantity offered by sellers is named a *supply schedule*. Table 1 combines the demand and the supply schedules for hay in our particular market.

The curve representing the relationship between price and quantity taken by buyers is called a *demand curve*, and that showing the connection between price and quantity offered by sellers is a *supply curve*. These curves are shown in Figure 1.

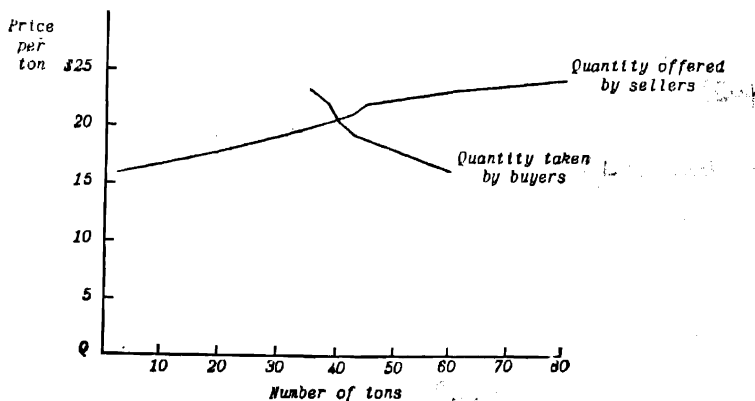


FIGURE 1. DETERMINATION OF PRICE IN A MARKET ¹

The price will be that which clears the market, that at which the entire supply offered for sale at this price finds

¹ Figures of this kind in economics are represented invariably with price measured along the vertical axis and quantity along the horizontal one, as shown here.

buyers. The supply equals the demand. In the hay market cited, the price evidently will be between \$20 and \$21. At \$20 the quantity demanded is in excess, because forty tons are wanted and only thirty-seven are offered for sale. At \$21 there is an excess supply, forty-two tons being offered although buyers are willing to purchase only thirty-nine. Where the price will settle between these limits cannot be ascertained from the data presented. Bids and offers will be made until a meeting place is found at which supply is equal to demand. It is not necessary that there should be only one price that satisfies this condition. The situation may be as in Table 2.

TABLE 2. DETERMINATION OF PRICE IN A MARKET, 2

Price per ton \$	Quantity taken by buyers tons	Quantity offered by sellers tons
20.00	40	37
20.25	39	39
20.50	39	39
20.75	39	40
21.00	39	42

In this case, either \$20.25 or \$20.50 satisfies the condition that supply and demand should be equal. In the real-estate market, where commonly the goods offered for sale (houses) are unique in that no two houses are exactly alike, it frequently occurs that the demand price and the supply price ² overlap considerably. Some time ago in an east-coast town, a client of one real-estate agent declared his readiness to bid \$11,500 for a house which the owner, unknown to either this agent or his client, had offered for sale through another agent at \$9,000. Here the supply price and the demand

² *Supply price* is the price at which the good is offered or supplied; *demand price* is that at which purchasers are willing to buy it.

price overlapped by \$2,500. Situations such as this, in which one party in a market is unaware of the price which is being asked or offered by another, are very common, with the result that frequently different prices prevail in the same market for articles which are similar to each other.

A brief account of the manner in which deals are made on the stock exchange may be illuminating. On a particular day, brokers have on hand a number of orders to buy and sell. Some of these carry the instruction "at the market," which means the broker is instructed to execute them at whatever price rules in the market at the time. But others may have price limits. The broker may have been instructed by the holder of a stock to sell a hundred shares at 10 (\$10 per share), by another to sell five hundred at $10\frac{1}{8}$, by a third to sell two hundred at $10\frac{1}{2}$, while on the other hand he has orders to purchase a thousand shares at $9\frac{1}{2}$, and a hundred at $9\frac{3}{4}$. He has to get in touch with other brokers to make a market price. Perhaps he finds one bidding 10 for a hundred shares, and makes a deal. The market price is now \$10. If we could tabulate all such orders to buy and sell which are in the hands of brokers when the market opens, we could draw a pair of curves, much as we did for the hay market. But the situation on the stock exchange is complicated by the fact that, after the market opens, new orders come in by telephone and telegram. Thus, learning through a local investment firm that the last price was 10, a shareholder in a distant city puts through an order to sell two hundred shares "at the market." The purchaser who was willing to pay 10 has been satisfied and no other buyer is in the market at so high a price. A buyer has bid $9\frac{7}{8}$ for five hundred shares. The broker proceeds to sell the two hundred offered "at the market" to him, although if his instructions had read "at 10 or better," no deal would have been possible in the circumstances.

SPECULATION

In most markets there are dealers who perform an essential function in the marketing process. The odd-lot traders on the stock exchange, who aggregate small parcels of shares into hundred-share lots and *vice versa*, are an example. As noted in the preceding chapter, some dealers engage in speculation. They build up their stocks by buying more and selling less, when they expect prices to rise. They reduce their stocks by the opposite process when they forecast a fall. In addition there are speculators proper, their main purpose being to make a profit out of price differences. They buy when they think prices are likely to rise and sell when they believe a price decline is in prospect. They may perform storage and financing functions but not necessarily. At times speculators exercise a stabilizing influence on prices, because they buy when prices have fallen on account of an excess supply, and sell when prices have risen in response to an excess demand. But sometimes they do the opposite. Expecting a further rise in prices, they add to their own stocks and thereby exaggerate the price rise. Similarly they may expect falling prices to continue and therefore sell from their stocks and increase the price decline. Even here, if their judgment is correct, their actions are not necessarily objectionable, because the transactions they undertake cause the market price to adjust itself speedily to an altered outlook. But if, as sometimes occurs, a large number of them become unduly optimistic or pessimistic and act accordingly, they exaggerate market movements to no purpose and do considerable harm, because unnecessary price fluctuations are very disturbing to the producers and consumers of a commodity.

To be successful, speculators must have all available information regarding supply and demand conditions. In the

case of the cotton market, for instance, they must have up-to-date knowledge of crop prospects in the various cotton-growing countries, on the current sales and outlook of the textile mills, and on stocks of fiber and cloth, as well as on underlying economic conditions, which of course influence the cotton market just as they do all other markets.

FUTURE TRANSACTIONS AND HEDGING

In the organized commodity markets, goods are not only bought for immediate delivery but also for delivery at a future date. Purchases and sales for immediate delivery are referred to as *spot* transactions, those for future delivery as *futures*. Thus such concerns as flour mills are able to quote to their customers prices for flour well in advance of its manufacture and delivery. The mills buy wheat futures at prices current at the time they sell the flour, quoting the flour price on the basis of the prices they are paying for the wheat. In this way the mills ensure themselves payment for the job of flour-milling, without its being necessary for them to indulge in speculation in the price of wheat, as they would have to do if they could not buy wheat at the time they quoted and sold the flour. It may be that the particular wheat they buy when they sell the flour is not suitable in quality to meet the flour sale. But this is of no great significance, because the prices of all grades of wheat move up and down together. If the mills buy one grade of wheat and want to mill another, all they need to do when milling time comes round is to sell the wheat which they have bought and buy other wheat of the proper grade. If wheat has gone up in price in the meantime, so that the wheat which they have to buy costs more, this is compensated by the fact that the wheat which they sell has also increased in price. The same is true of a price decline. The wheat which

the mills own falls in price but so does the wheat which they have to buy.

Protection against risk can be secured also when the mills are in the opposite position. Perhaps a miller has purchased spot wheat for milling, intending to sell the flour later. To protect himself against the risk of a fall in price, which would affect flour as well as wheat and cause him to lose money, the miller, at the time he purchases the wheat for milling, sells the same quantity of wheat for future delivery. By this sale he undertakes to deliver grain that he knows he will not process, unless he buys more, because he plans to mill the wheat which he has bought. He intends to purchase other wheat to deliver on this futures contract. Suppose that by the time the miller sells his flour, the prices of wheat and flour have fallen. He may have sold his wheat futures at, say, \$1.60 a bushel. If wheat has fallen twenty cents a bushel and flour an equivalent amount, presumably he will be able to buy other wheat for delivery on his futures contract at \$1.40 a bushel, and thus make a profit on his futures transaction that will counterbalance the loss which he incurs on the milled grain. Such a transaction is called a *hedge* and the process is known as *hedging*. A hedge is a parallel and opposite transaction undertaken to avoid the risk involved in price fluctuation. However, a hedge operates to avoid the chance of gain as well as the risk of loss. In the example just mentioned, if the price of wheat had risen to \$1.80 a bushel, and flour a comparable amount, the miller would have lost twenty cents per bushel on his futures transaction and thereby would have canceled the twenty cents gain he made on the milled grain.

Dealing in futures, like speculation, is often criticized. But at times it is very useful. The country elevator owner who buys grain for storage does not wish to speculate, and so sells his grain for future delivery at the time he buys it spot. He

may be selling to a miller who, having sold flour for future delivery, wants to buy grain futures to protect himself. Obviously each of these transactions is beyond objection, just as purchases and sales by investors on stock exchanges are unobjectionable. True, speculation takes place that has no motive beyond that of making money for the speculators, but it must be remembered that often speculators buy from and sell to each other. The winnings come from the losers.

SUMMARY

In any particular market, price is determined by the relationship between quantities wanted by buyers at different prices and quantities offered by sellers. The price reached in the market is that at which the supply offered for sale finds buyers.

Dealers and speculators operate in most markets. Since commonly they buy more when they think prices are unduly low, and buy less, or even sell, when they believe prices are unduly high, they exercise a certain stabilizing influence. But sometimes they exaggerate market movements rather than reduce them.

Transactions in commodities for future delivery have their place in the economy.

EXERCISE

Examine the commercial and financial pages of a newspaper. Read the day's report of the local produce market and that of the New York Stock Exchange. Notice the form in which quotations are made and the extent of the day's movements.

PROBLEMS

1. A middle-aged man, fearful of the possible effect of a price rise on the value of his life insurance, tells you that

someone has told him that he ought to hedge his risk in some way. Can you suggest any means whereby this man might hope to hedge his risk?

2. You notice a statement to the effect that, during the stock exchange boom of 1929, speculation "absorbed a large part of the national income." What happens to money that is spent in buying stocks for speculative purposes? To what extent do you think it can be said that part of the national income is absorbed in speculation?

CHAPTER 5

CONSUMPTION AND DEMAND: THE UTILITY ANALYSIS

In the previous chapter, we considered the manner in which prices are determined by the demand and supply in the market. But behind demand and supply are the more fundamental factors of consumption and production. These will be examined in turn.

DEMAND

It has been mentioned in the last chapter that the quantity which the buyers in a particular market will take at a given price is described as the demand at that price, and a table that sets forth against each price the quantity buyers will take is called a demand schedule. Table 3 may be considered to represent the demand schedule for bread in a small town.

TABLE 3. DEMAND SCHEDULE

Price per loaf Cents	Number of loaves taken by buyers, per day
8	800
9	750
10	700
11	650
12	600
13	550
14	500
15	450

Alternately, as has also been mentioned, the relationship between price and quantity taken by buyers may be de-

picted by a curve, called a demand curve. Figure 2 shows the demand curve for bread, on the basis of the data given in Table 3.

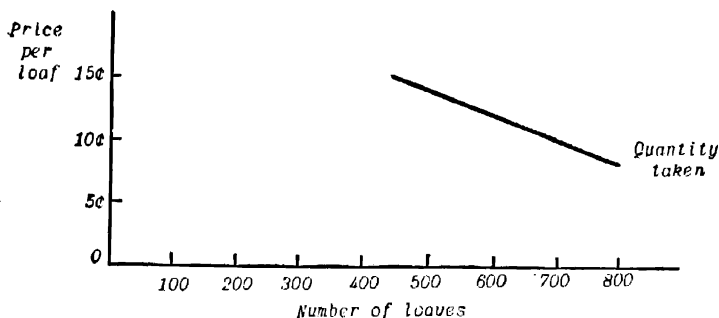


FIGURE 2. DEMAND CURVE

It will be noticed that in this case quantity falls as price increases. This is such a general rule that sometimes a *law of demand* is stated to apply to ordinary markets: *usually a larger quantity of a commodity is taken as the price falls and a smaller quantity as the price rises*. But this is by no means an infallible rule. Sometimes the quantity taken remains unchanged in spite of considerable alterations in price, and there are even instances where quantity increases when the price rises, and falls when the price is diminished.

THE UTILITY ANALYSIS

In the case of consumers' goods, that is, goods ministering directly to human wants, commonly economists explain this tendency for buyers to take less of a commodity as its price advances by the *principle of diminishing utility*. This principle has been applied rather widely, as is shown later in the chapter. The resulting analysis has been criticized severely by some, and even rejected altogether. But it has been and still is of sufficient influence in economics to merit de-

scription, whatever is concluded regarding the criticisms. It is unfortunate that there should be disagreements on such matters, although these are perhaps unavoidable where things so intangible as human feelings are involved. But where disputes on major points exist, it is preferable to recognize rather than ignore them, so that the student will not have to unlearn later what he has studied in his beginning course. The utility analysis will be described in some detail, therefore, before we proceed to qualify it in the light of the criticisms.

THE PRINCIPLE OF DIMINISHING UTILITY

The principle of diminishing utility states that *the utility or satisfaction a consumer gets from a good diminishes as the quantity of it that he possesses increases*. Thus the consumer is thought to obtain more satisfaction or utility from the first unit which he consumes of a particular commodity than he does from the second, more from the second than from the third, and so on. From this it follows that if the price is high, he will purchase only the small quantity of the commodity which yields him sufficient utility to justify paying the high price, but if the price falls he will buy additional units, which do not bring him sufficient utility to merit paying the higher price but are worth acquiring at the lower one. More of the commodity is taken by each consumer, therefore, as the price declines. Since the demand schedule for any good is merely the sum of the quantities taken by the different buyers in the market, it follows that the schedule will behave in the same manner as these quantities: less will be taken as the price of the commodity rises, more as it falls.

To illustrate the effect of price on the quantity taken by an individual buyer of consumers' goods, we may consider the situation of a thirsty traveler on a hot day who stops at

a roadside stand to buy milk. A first glass is drunk with great gusto and a second speedily called for, to be drunk with enjoyment. On due consideration, the traveler decides to take a third glass, but he is not entirely certain that this third drink is worth the money it costs and he gives no thought whatever to a fourth glass. Clearly, the utility or satisfaction that the traveler receives from the several glasses falls off. Probably milk is representative in this respect of most commodities which minister directly to human wants.

MARGINAL UTILITY

The utility obtained by the consumer from the last unit of a commodity that he consumes is called the *marginal utility*. Economists have laid down the rule that *marginal utility must cover price*. What is meant by this is that the utility got by the consumer from the last or marginal unit of a commodity must at least be equal to the utility he loses by spending his money on this amount of the commodity. Money itself has no utility; what this means in reality is that the consumer must believe that he gets as much utility from buying the marginal unit of the commodity as he would obtain by spending his money in any other manner.

Consumption of a number of goods

Ordinarily a number of commodities are purchased by the same individual. If the consumer believes that the utility he receives from the marginal unit of each of them approximates that which he would obtain by spending an equal amount of money in some other way, it follows that an equivalent sum of money (such as ten cents) spent on several commodities yields about the same amount of utility from each commodity. In other words, *the marginal utilities of all*

goods purchased by a consumer, relative to the prices paid for them, are approximately equal. This point is brought out by Table 4.

TABLE 4. UTILITIES DERIVED FROM SUCCESSIVE TEN-CENT UNITS OF THREE COMMODITIES

	Number of units of utility yielded by successive glasses of milk	Number of units of utility yielded by successive rolls of bread	Number of units of utility yielded by successive pats of butter
1st	50 [1]	40 [2]	24 [5]
2nd	38 [3]	25 [4]	2 [10]
3rd	22 [6]	15 [7]	....
4th	10 [8]	5 [9]	....
5th	....	....	....

The numbers in brackets indicate the consumer's order of preference. If a glass of milk, a roll of bread, and a pat of butter each costs ten cents, obviously our thirsty traveler, if he has only ten cents in his pocket, will prefer a glass of milk, marked [1]. If he has twenty cents, he will choose a roll, marked [2], before a second glass of milk [3]. If he has thirty cents, he will purchase this second glass of milk. With forty cents he will buy a second roll [4] and with fifty a pat of butter [5]. If he has sixty cents, he will take a third glass of milk [6]. If he has seventy cents to spend, he will buy a third roll [7]. With eighty cents, he will purchase a fourth glass of milk [8] and with ninety cents he will buy a fourth roll [9]. If he spends a dollar, he will add a second pat of butter [10]. But however much money he has in his pocket, he will spend not more than a dollar, because, on the basis of the figures set forth in Table 4, nowhere is there an eleventh unit of commodity that yields him any utility. Table 5 illustrates the situation.

TABLE 5. MARGINAL UTILITIES WITH SUCCESSIVE TEN-CENT EXPENDITURES

Amount spent	Glasses of milk	Rolls	Pats of butter	Marginal utility of milk	Marginal utility of rolls	Marginal utility of butter
10¢	1	..	..	50	..	..
20¢	1	1	..	50	40	..
30¢	2	1	..	38	40	..
40¢	2	2	..	38	25	..
50¢	2	2	1	38	25	24
60¢	3	2	1	22	25	24
70¢	3	3	1	22	15	24
80¢	4	3	1	10	15	24
90¢	4	4	1	10	5	24
\$1.00	4	4	2	10	5	2

In practice it is very unlikely that our traveler will carry his consumption so far, even if he has more than a dollar in his pocket. He will bear in mind that his money can command utility in other situations. It will enable him to purchase a package of cigarettes in the evening, a bed for the night, milk and rolls tomorrow, and so forth. If he estimates that ten cents will yield him twenty units of utility when he spends it in one of these ways, then he will not spend more than sixty cents on this occasion. When he spends the sixth ten cents, he obtains the twenty-two units of utility represented by the third glass of milk. In spending a seventh ten cents, he acquires the third roll, which yields only fifteen units of utility. The marginal utilities are not shown equal for each commodity (thus, with an expenditure of sixty cents, they are twenty-two units for milk, twenty-five for bread, and twenty-four for butter) because ten-cent units of expenditure are comparatively large. But if the units of expenditure could be made very small, the marginal utilities would be approximately equal.

Exchange of goods for each other

This principle of approximate equality of margins is used to explain also the exchange of goods for each other. Thus, if we imagine a consumer possessing a large quantity of one commodity, evidently the utility of the last unit of it to him is small. On the other hand, the utility of a unit of another commodity that he wants, but of which he has none, is great. If, then, he meets another individual who has similar tastes and who owns a supply of the desired commodity, both parties will benefit from an exchange of commodities. This may be illustrated by supposing that our traveler has set on his journey with a supply of milk only, a bottle containing four glassfuls. Around midday he meets another wayfarer who he finds has brought with him four rolls of bread but no milk. The traveler with the milk suggests an exchange. He offers to give some of the milk in exchange for bread. The other, having similar tastes, agrees with alacrity. Both of them gain utility by the exchange. The situation is set down in Table 6.

TABLE 6. MARGINAL UTILITIES IN THE EXCHANGE PROCESS

	First traveler		Second traveler	
	Utility lost (milk)	Utility gained (bread)	Utility lost (bread)	Utility gained (milk)
1st exchange (glass for roll)	10	40	5	50
2nd exchange "	22	25	15	38
3rd exchange "	38	15	25	22
4th exchange "	50	5	40	10

In the exchange process the traveler who possessed all the milk when the meeting took place gives up a glass of milk that would have been his fourth, which represents ten units of utility to him, in exchange for a roll that would have been the other traveler's fourth but is his first and

therefore yields him forty units of utility. His gain by exchanging one glass of milk for a roll is large. He gains also from exchanging another glass of milk for a second roll, because he gives up what would have been his third glass, with twenty-two units of utility, for a roll that has twenty-five units of utility. Beyond this he will not go. It will be foolish to part with his second glass of milk, representing thirty-eight units of utility, in exchange for a third roll that will yield him only fifteen units of utility. The bread-carrying traveler is in the same position. He gains utility by parting with what would have been his fourth and third rolls in exchange for a first and second glass of milk, but he will lose utility if he gives up more rolls for milk. Thus, there is seen the further rule that *the exchange of one commodity for another is carried to the point where the marginal utilities of the commodities possessed by the exchanger, relative to the price, are approximately equal.*

Exchange of labor and other factors of production for consumers' goods: the production process

The same procedure has been used to explain production. If we think of a single productive factor, namely labor, we can say that the laborer's time and trouble are worth something to him, because work is onerous and leisure has some value. No doubt a certain amount of healthful activity is enjoyable but as more and more time is given to work, there is an increasing loss or disutility, which has to be set against the diminishing utility derived from successive units of the article produced. Thus, Crusoe on his island might be willing to do a little work even if there were no product, because he likes the exercise or thinks that it is good for him. Beyond that point he will work only so long as the labor he does is compensated by the utility which he gets from its product. He has to eat, clothe himself and shelter himself from the

elements, and a small amount of the goods that satisfy these needs will have considerable utility to him. But as he gets more goods, the marginal utility of goods decreases. And, at the same time, the marginal utility of leisure increases or, what comes to the same thing, the marginal disutility of work increases. Under these circumstances, Crusoe can be expected to carry his labor to the point where his gains cease and, if he goes any further, he loses utility. The curves shown in Figure 3 were developed by an economist to

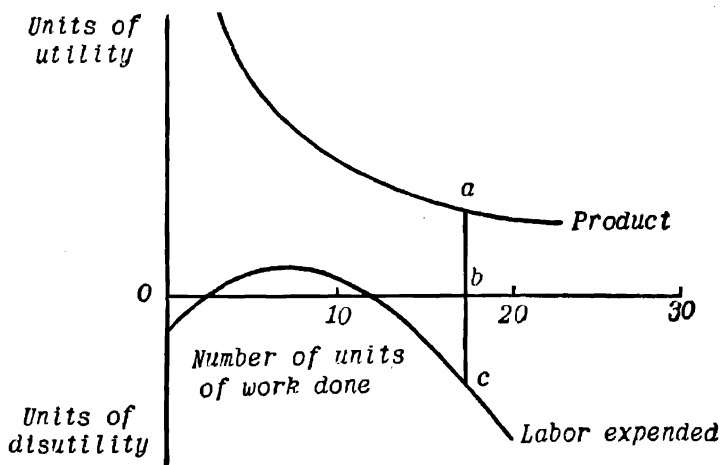


FIGURE 3. MARGINAL UTILITY AND THE PRODUCTION PROCESS

illustrate this. Quantities of work and product are measured along the line Ob , the worker's activities being carried as far as b , where the utility derived from the product (ab) is equal to the disutility of the labor required to get it (bc).

Application of the principle in this way is fairly simple in regard to labor but less so with a productive factor such as land or copper. In the case of a resource like copper it may be that the owner himself has no use for it, so that he

does not suffer directly from being deprived of it, as is the case with labor. However, he has other possibilities for its use, which would yield him utility or satisfaction from their product, so that *by selecting one use he excludes these other utilities*, just as he does when he chooses to employ his labor in production rather than in leisure.¹

Choice between present and future consumption

The principle of equalization of marginal utilities has been employed also to explain the choices which individuals make between present consumption and saving for future use. We can take a simple case, supposing that a particular man knows that every twelfth month he will have no in-

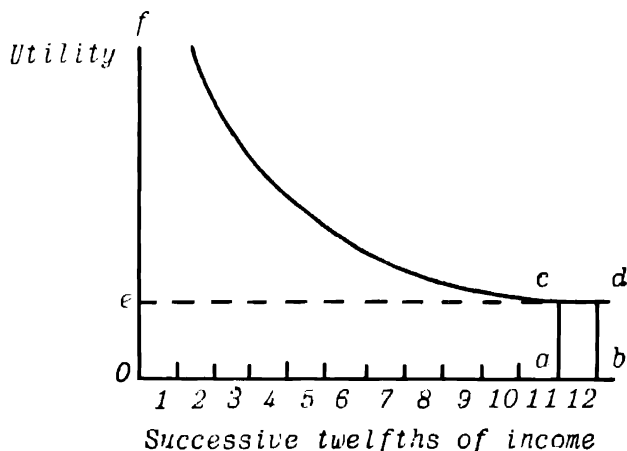


FIGURE 4. MARGINAL UTILITY AND SAVING

come because he will be on vacation, without pay. Disregarding the possibilities that he may either spend more while he is on his vacation than he does in the other months or that he may secure other paid employment in the twelfth month,

¹ This is an application of the alternative or opportunity cost principle, which is explained in Chapter 8.

the sensible thing for him to do is to consume only eleven-twelfths of his salary in each of his working months, saving one-twelfth each month. In the vacation month, savings equal to eleven-twelfths of a month's salary are available for consumption. This is illustrated by Figure 4.

Of course our individual may fail to provide beforehand for his vacation, borrowing to meet his expenditure during that period or running into debt with storekeepers who supply him with goods. If he borrows or goes into debt in this fashion, however, he has to give up some of his salary in subsequent months for repayment, so that essentially it is the same as if he had saved in the preceding months. He sacrifices monthly the last twelfth of his salary, which if consumed at the time would represent a utility corresponding to the area $abcd$. In eleven months, therefore, he gives up an amount of utility corresponding to $Oace$. The utility he receives in the twelfth month, when he has no salary, is the indefinite area $fOac$, indefinite at f because it seems impossible to put a utility value on those increments of income that sustain life itself. The gain in utility from saving corresponds, therefore, to the area fec .

Utility and the distribution of wealth

The principle of equalizing marginal utilities has been applied as well to the distribution of wealth between different individuals. If it is assumed that all individuals have the same capacities to derive utility from spending successive dollars of income, then it follows that utility is maximized if all individuals have the same income.

The utility which two individuals obtain from different amounts of income may be seen in Figure 5. The poorer has an income of Ob , so that the marginal portion (which is represented for convenience as one-sixth of the whole) has a utility represented by $abpq$. The rich man's income is Oh ,

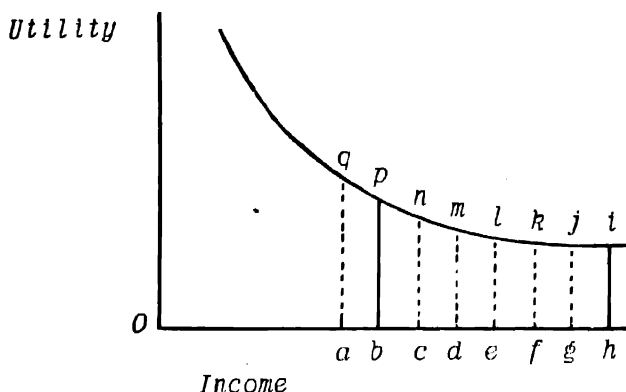


FIGURE 5. MARGINAL UTILITY AND THE DISTRIBUTION OF WEALTH

so that the marginal utility of a unit to him is $ghij$. Since the poorer man would gain more utility ($bcnp$) by receiving another portion than the richer would lose by giving it up ($ghij$), the total utility of the income would be increased by transferring this portion of income from the richer man to the poorer. The same is true when a second portion is transferred, since the richer man loses only $fgjk$, while the poorer gains $cdmn$. It is true also of the third, since the man from whom it is taken loses only $efkl$, while he who gets it gains $delm$, which is greater. However, it should not be concluded at this stage of our study that this principle alone is sufficient to justify equalizing incomes as a practical policy, because not only must the limitations of the principle itself be examined but we must also consider the effect of equalization on human incentives.

SUMMARY

A number of economists have explained the demand for consumers' goods by reference to the principle of diminishing utility. Utility has been used to explain also the selection

of goods for consumption, the exchange of one good for another, the exchange of labor for product (the production process) and the choice between present and future consumption. It has been employed to elucidate the problem presented by the unequal distribution of wealth.

EXERCISE

Before reading the next chapter, ask yourself how far the utility analysis is applicable to your own decisions. How do you decide what to eat and drink when you buy a meal in a cafeteria, how much of your income to spend on clothes and how much on entertainment, how much education to obtain? You will be asked these questions again after you have read the following chapter.

CHAPTER 6

CONSUMPTION AND DEMAND: THE NON-UTILITY APPROACH AND SOME PROBLEMS

LIMITATIONS OF THE UTILITY ANALYSIS

While the approach examined in the last chapter has a certain value in explaining the major decisions made by individuals regarding the disposal of their effort and income, beyond this it is not very realistic. Satisfaction or utility is an intangible thing; it cannot be measured. Frequently a person has great difficulty in deciding which of two articles he prefers. Department-store clerks tell how customers spend half an hour trying to choose between two hats or coats, and make their choice only to return the merchandise the next day for a refund.

In general no doubt it is true that when commodities such as milk are consumed in successive units until the point of saturation is reached, the consumer gets less and less satisfaction from his consumption. But there are other goods, such as books, which show less evidence that satisfaction diminishes. A book collector who already owns a hundred or a thousand volumes may feel just as keenly that he wants to possess another book as he did when he acquired the first one.

Many articles are bought largely because the purchase is habitual or because they are considered essential in the social group to which the buyer belongs. Articles are demanded for ostentation, to impress neighbors and acquaintances. Presumably the utility here is not in the direct satisfaction they afford the consumer. Indeed directly they may be a nuisance to him. But such satisfaction as the

consumer obtains is derived from contemplating the admiration, approval or envy of others. Some years ago, the writer, while crossing the campus with one of his colleagues, learned in conversation that his companion has purchased a two-dollar ticket for a dinner. His colleague grumbled: "I shall have to wear dress clothes, which I detest. The speeches are sure to be dull and I know that I shall have indigestion for a couple of days afterward." But this man's presence at the dinner was expected by the people among whom he moved and he felt that he had to be there. If the meaning of utility is to be stretched to cover such cases as these, then this man must have regarded the utility got from knowing he had the approval of his fellows as being sufficient to cover not only the utility obtainable from two dollars spent in other ways but also the disutility attendant upon his presence at the dinner.

Many economists try to avoid basing their theories on such concepts of utility. They speak of market demand, without relating it to consumer satisfaction or utility. They tabulate demand schedules and draw demand curves but say nothing about utility, speaking instead of *consumer preferences*, without going into whatever may cause the preferences.

There is a lot to be said for this view, and for the most part it is followed in this book. But it can be overemphasized. For example, if it is contended that, because utility is immeasurable, taxation which takes proportionately more from the rich than from the poor is opposed, it seems to go beyond the bounds of common sense. Legislators think it is obvious that in ordinary circumstances a dollar means more to a poor man than it does to a rich one, and so they have no hesitation in passing fiscal measures that operate in an equalizing direction, on the ground that this will increase total satisfaction.

FORMS OF THE DEMAND CURVE

A demand curve or schedule may show three general forms. The demand may be *fixed*, regardless of price. The demand for college textbooks, where their purchase is compulsory, falls into this category over ordinary price ranges, because within these ranges the number of instructors who adopt them is unlikely to be affected by small price differences, while the price of textbooks has little if any effect upon class enrollments. There are exceptional cases in which the quantity of a good taken by buyers *diminishes when the price falls* and *vice versa*. Under certain circumstances the demand for bread is said to have behaved in this fashion. In a social group whose income is small, a large portion of the expenditure on food may go for bread. A fall in the price of bread frees a corresponding portion of the consumers' income for spending on other goods, some of which (such as biscuits) compete with bread in the diet and therefore cause less bread to be consumed. Certain goods wanted for ostentation probably have demands of this kind. Very likely the demand for diamonds for engagement rings would disappear if diamonds were to become as cheap as glass, although other uses might be expected to develop. The third type of curve, which shows that the quantity taken falls off as the price rises, has been considered at some length and requires no further examination here.

ELASTICITY OF DEMAND

The term *elasticity* is employed in connection with either demand or supply. It signifies the *proportionate change in quantity* (wanted by buyers or offered by sellers) *which takes place in response to price changes*.

A demand is said to have no elasticity, or to be *perfectly inelastic*, if the quantity taken by buyers does not alter when

the price changes. We may imagine the demand of the government for a certain mineral for war purposes to be in this category. Figure 6 illustrates such a demand, fifteen hundred tons per month being taken in this case, regardless of price.

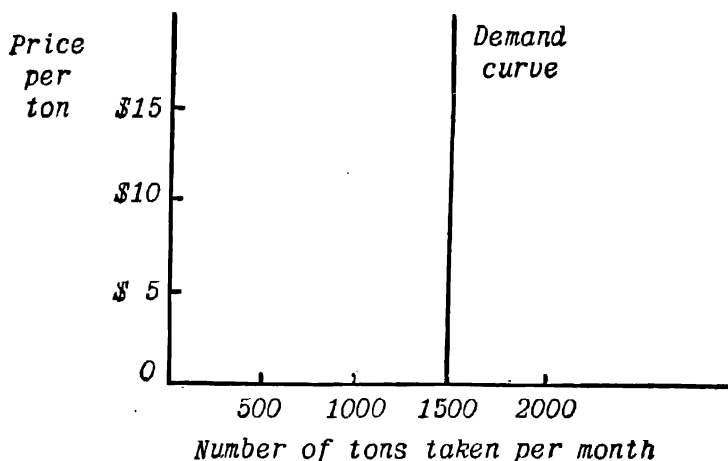


FIGURE 6. PERFECTLY INELASTIC DEMAND

When buyers are willing to take an infinite amount of the commodity at the same price, the demand is said to be *perfectly elastic*. The demand for wheat confronting the individual wheat grower is of this nature. His production is too small to influence the market price, and he can market at the ruling price all the wheat which he cares to grow. Figure 7 shows this condition, it being assumed that the farmer can sell at a dollar a bushel all the wheat that he is able to produce.

Aside from the extreme cases just mentioned, the terms elastic and inelastic are used in a relative manner. A dividing line is set where elasticity is said to be *1* or *unity*. If there is less elasticity than this, the demand is said to be

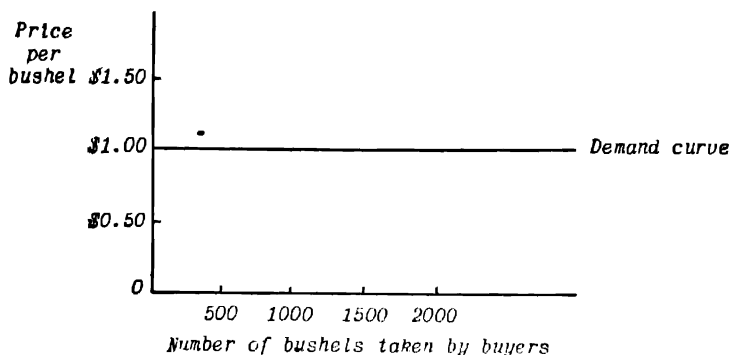


FIGURE 7. PERFECTLY ELASTIC DEMAND

inelastic. If there is more, it is described as *elastic*. The definition of unit elasticity should be noted. It is the amount of elasticity possessed by a demand whose nature is such that *buyers spend the same sum of money on the commodity notwithstanding price changes*. Thus, if the price falls to one-half, the quantity taken by buyers doubles, and if the price rises to three times its original amount, the quantity taken diminishes to one-third. Wherever a fixed sum of money is

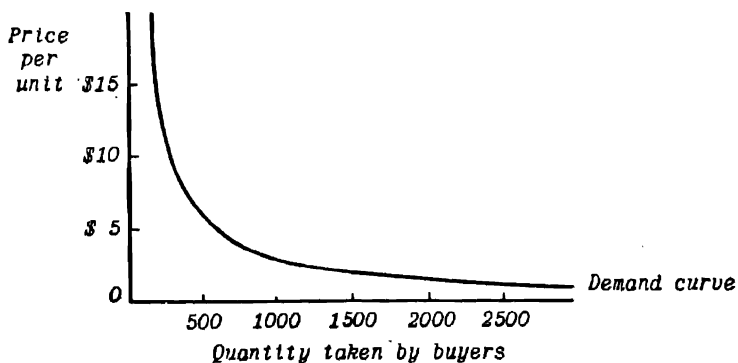


FIGURE 8. DEMAND OF UNIT ELASTICITY

allotted to purchase anything, the demand is of unit elasticity. Figure 8 shows the demand curve resulting from the expenditure of a certain amount, \$3,000.

Fixing the dividing line between elastic and inelastic in this manner makes it possible to describe a demand as elastic if buyers spend more money on the commodity when the price falls, and less when it rises. A demand is inelastic if buyers spend less when the price falls and more when it increases.

CHANGES IN DEMAND

Alterations in demand are of two types. First, the quantity of a commodity taken by consumers changes in response to price movements. The quantity taken at each particular price remains as before—that is, the *demand schedule is unchanged*, but the consumers purchase more or less as prices alter. This type of change has been considered already.

In the second type, the *demand schedule changes*, so that a different quantity is taken at the same price. If buyers take more of the commodity at the same price or the same quantity at a higher price, the demand is said to *increase*. If the

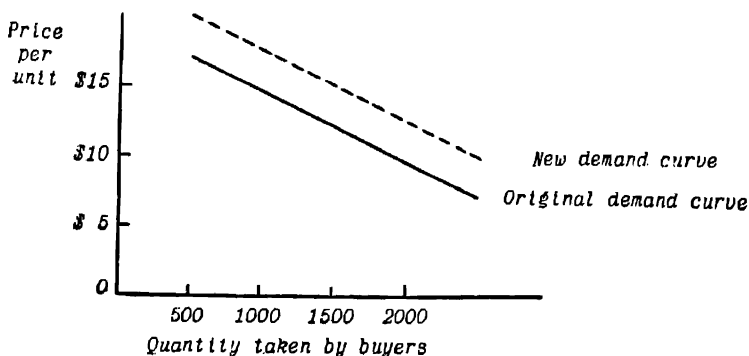


FIGURE 9. INCREASE IN DEMAND

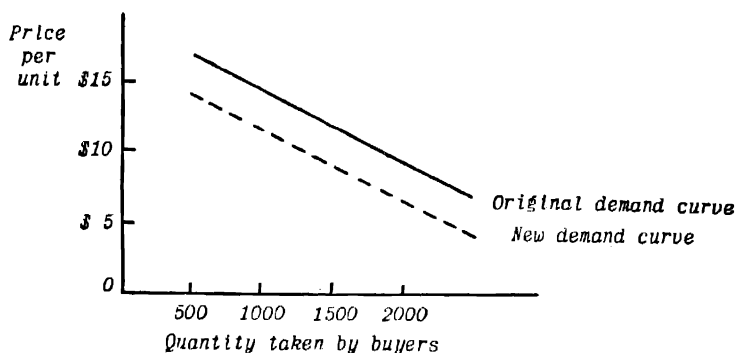


FIGURE 10. DECREASE IN DEMAND

quantity taken by buyers is less at the same price or the quantity taken is the same at a lower price, then the demand is said to *decrease*. Figures 9 and 10 illustrate these changes.

This use of the words increase and decrease in connection with demand should be noticed, for often these words are reserved for demand changes of the second type. When the changes in demand are of the first type and buyers adjust their purchases because of price changes, the demand schedule itself remaining unaltered, the terms *extension* and *contraction* are used. With the usual kind of demand schedule, the quantity taken by buyers extends when the price falls and contracts when the price rises.

When the demand schedule changes (that is, in alterations of the second type), usually the rise or fall is not uniform, as in Figures 9 and 10. Commonly demand rises or falls more in some price ranges than in others. For instance, if an invention should make feasible the use of silver instead of stainless steel for some industrial purposes, the demand for silver could be expected to increase only in the low-price ranges, because a high price probably would prevent silver's being used in accordance with the new technique.

Causes of changes in demand

We may examine now some of the factors leading to the second type of demand change, that is, the factors which shift the demand schedule or curve up or down as shown in Figures 9 and 10.

Changes in the prices of other commodities. The quantity of a good that buyers take is influenced by many prices besides that of the commodities themselves. Some goods are *substitutes*. Thus, tea, coffee and other drinks can be substituted for each other to some extent by the consumer, so that if one rises in price relatively to the others, more of the others will be consumed. Similarly, beef, mutton and pork are substitutes. If beef becomes cheaper, more beef but less mutton and pork will be purchased. Certain goods are *complementary*. They are used together. Coffee and sugar are examples, as are cigarettes and matches. If the price of one of these goods rises, then ordinarily the quantities buyers take of both of them will decline. If sugar becomes dearer, less of both sugar and coffee will be sold.

This general idea can be extended over a wide range of commodities. A few moments' thought will serve to show that the quantity of coffee sold is likely to be influenced by the prices of a number of commodities, such as cups, spoons, milk, tea, chewing gum (because the consumer may chew gum instead of drinking coffee) and automobile heaters (because if drivers are kept warm, they may not stop so often at roadside stands to drink coffee).

Changes in population. Alterations in numbers of people and in their age-distribution affect demands for many commodities. A growth in numbers increases the demand for housing, for example. The higher birth rate of the 1940's has caused an increased demand for baby clothing and toys.

Changes in the quantity or velocity of money. As is shown

in a later section,¹ an increased supply of money or a higher velocity of circulation, unaccompanied by a corresponding rise in the production of goods, raises demands for many commodities without expanding supplies and therefore increases the price level.

Changes in real income. If real incomes rise, as they have risen for many decades past, not only do people increase their purchases of necessities, such as food and clothing, but they tend to buy more expensive foods and better clothing, and they also purchase such goods as radios and automobiles. A change in the distribution of real incomes affects demands at both ends of the social scale. If heavy taxes reduce the real incomes of the rich, while the government spends money on improving the education of the poor, the demand for seaside villas falls off while more cheap literature is sold.

Changes consequent on the business cycle. Demand differs considerably in the various stages of the business cycle. In depressions there is little demand for durable goods, while in times of prosperity the demand for these goods is very great.²

Changes in taste. Consumers' tastes may alter as the result of a number of influences. Ornate objects like silver plate and ostrich plumes passed out of fashion when tastes became simpler. Japanese toys were unmarketable in some parts of America during the Second World War. Dress clothes met the same fate in Russia in the early years of the revolution, as did the works of Jewish and socialist authors in Nazi Germany. The Americanization of an immigrant population lessens the demand for foreign goods and increases that for typically American products.

Advertising. Producers have learned that it is possible to influence consumers' demands in their favor by advertising.

¹ See Chapter 20.

² This subject is studied in Chapter 21.

Sometimes an advertisement gives prospective purchasers information calculated to increase sales, such as that a peculiar treatment keeps the product fresh or sweet. But often the consumer merely has the name of the advertised product brought before him under conditions that are intended to cause it to be remembered and called for in due course. A picture of a beautiful girl appears on an advertisement for raisins. The beer drinker is told that a certain brand has "just the kiss of the hops—no bitterness" and a variety of cigarettes is said to be "milder, cooler, better tasting;" the implication presumably being that competing brands do not possess these qualities and therefore are inferior. Since commonly the consumer is not a competent judge of the commodity he is buying, he may be misled, although in recent decades the activities of the Federal Trade Commission, established to control injurious practices in business, has led to the cessation of some of the most objectionable of these practices.

Government planning of the consumer. An aspect which has grown considerably in importance in recent years is the use of propaganda by governments to influence consumer tastes, especially in such countries as Nazi Germany and Soviet Russia. Planning consumption is a logical part of a planned system. The government is able to employ the machinery of education, the press and the radio for the purpose of changing consumer tastes in the directions it favors. If people are taught to want what the government intends them to get, they will be satisfied. Probably this is the main source of the power which authoritarian governments have exercised over their peoples.

SUMMARY

The utility approach has a certain value in explaining the major decisions made by individuals regarding the disposi-

tion of their effort and income, but beyond this it is not very realistic. Many economists, therefore, avoid basing their theories on such a concept as utility, and refer to consumer preferences without examining the nature of these preferences.

There are other forms of demand curves besides the familiar one in which the quantity taken by buyers falls off as the price rises. The idea of elasticity of demand and the causes of changes in demand are examined.

EXERCISES

1. Return to the exercise set at the end of the preceding chapter. Do your answers remain the same?
2. Examine some of the larger advertisements in an illustrated weekly. How does the type of appeal made by some of them compare with what is described in this text?

PROBLEMS

1. If a demand has unit elasticity, so that the consumer spends the same sum on the commodity regardless of its price, does this mean that he would not gain by a price reduction?
2. If the price of cotton should increase considerably, do you think that the demand for artificial silk or rayon would be affected? For wool? Mention any other prices that you consider may affect the demand for rayon and for wool.

CHAPTER 7

THE PRODUCING UNIT

Although it may be said that in general production in America is entrusted to private enterprise, it must be recognized that private enterprise takes various forms and is directed toward more than one end, and also that public or government enterprise has some importance. The several types of business enterprise are examined in the present chapter. They may be classified as follows.

1. Single enterprisers and family units, engaged in production for the purpose of securing income on which the individual or family can be supported.

2. Groups of individuals associated for profit, organized as a partnership, corporation or trust.

3. Groups of individuals organized primarily for the purpose of providing themselves with a product or service, as the co-operative.

4. Public institutions, including government bodies.

5. Mixed enterprises, in which government and private interests participate.

These classes will be considered in some detail.

THE SINGLE ENTERPRISER AND FAMILY UNIT

In numbers alone this class represents by far the most important type of business enterprise in America at the present time, although most of the enterprises included are very small. It is dominant in agriculture, in trades that furnish household or personal service like plumbing and barbering, and in professions such as law and medicine—although in the professions the partnership is also very frequent.

The enterpriser in this class works on his own account, with or without a certain amount of paid assistance. The business is so small that the owner-operator is able to give it his personal attention, a feature which avoids waste on the one hand and assures competent work on the other, provided the operator is properly trained. It is this latter factor more than anything else, perhaps, which makes the small business the rule in the learned professions, despite the fact that frequently small size means that the enterpriser must perform a diversity of tasks and is denied the advantages of large-scale specialized machinery. The general practitioner in medicine, for instance, has to do without many of the aids that are found in a large clinic or hospital.

The family aspect is important in some industries, especially in agriculture. The ordinary American farm is a family enterprise. Not only does the farmer's wife herself perform many of the tasks which are done by others for the city housewife, such as growing vegetables and canning fruit, but frequently she operates a considerable poultry enterprise and in busy seasons may participate in field work. As they grow older, the boys and girls of the farm are given jobs appropriate to their years and interests. Work and life are knit together in a manner which has given rural life features not found in that of the city. Large numbers of farm people have migrated to cities and have found there that the habits of industry and frugality gained on the farm are a marked advantage. The popularity of "down home on the farm" songs in this country is based on the warm feelings which these country-born people have for their farm homes. Many city workers have considered the country a good place in which to rear their children and are willing to bear the trouble and expense of lengthy daily journeys to work, in order to have the advantages of rural life. Innum-

erable part-time small farming enterprises are found within short distances of American cities.

Some of these features are found in other occupations. The storekeeper or garage proprietor who lives at his place of business is situated somewhat similarly. The small town affords a background like the farm in some ways. American literature reveals almost as much nostalgia for the small town as for the farm.

Aside from family factors, small enterprises have the advantage of affording to large numbers of people the opportunity to be their own masters, and probably for this reason they are justified as part of the social picture. But frequently children are overworked and denied proper educational opportunities, and in this and other ways the small enterprise has its social disadvantages. In the light of what has been said, certainly it would be incorrect to look upon the small personal or family enterprise as purely a profit-seeking organization.

THE PARTNERSHIP

Often in business some form of association of individuals appears desirable. Capital may be required, which the existing owner cannot obtain without bringing in someone else. The business may have grown too large to be managed by one man. Two or more persons may have skills or inclinations which supplement each other, as a technician and a business organizer. A successful professional man who is approaching retirement age may desire a younger man to assist with his work and later take it over. Partnership seems an obvious solution in such situations. Two or more individuals make an agreement for mutual association in the conduct of a business. Frequently the agreement is verbal only, but preferably it should be in writing and so drawn

that it covers such points as the amount of capital and labor to be furnished by each partner, whether or not any salary or interest is to be paid before profits are determined, how profits and losses are to be shared, and what is to be done if one of the partners wishes to sell or dies.

Except where state law permits what are called *limited partners*, as well as the ordinary type, individual partners are liable to the full extent of their possessions for losses incurred in connection with the partnership, and sometimes this is a serious drawback. Even a limited partnership must have at least one unlimited partner. Another disadvantage is that, in the absence of provision in the partnership agreement to the contrary, a partnership is dissolved by the death or bankruptcy of one of the partners. In some cases the law restricts the number of partners, but in others there is no such restriction and partnerships are formed to operate large enterprises. A famous example of this has been the Morgan partnership, formerly prominent in the investment banking field.

Present income-tax laws give the partnership an advantage over the corporation in that partnership profits are taxed only once, as income of the individual partners, whereas corporation profits are taxed twice if they are paid out as dividends—once in the hands of the corporation itself, and again as dividends in the hands of the stockholders.

In practice the partnership possesses a number of the advantages and disadvantages of the single enterprise, since most partnerships are comparatively small.

THE TRUST

The law allows an individual or a small group to hold **property and otherwise act on behalf of a larger body, through the medium of what is called a trust. The purposes of the trust and the powers and duties of the trustees, or**

persons appointed to act for the trust, are defined in the agreement which establishes the trust. Because of a peculiarity in the laws of Massachusetts, many organizations in that state take the form of trusts that elsewhere would be corporations.¹

THE CORPORATION

A group of individuals may incorporate for business purposes, that is, they may obtain a charter from the authority established by the state for this purpose. In substance such a charter represents the right of group existence as distinct from individual existence. In the eyes of the law an incorporated group has an existence separate from that of the members of the group, from which it follows that contracts binding on the corporation can be made by officers of the corporation but not by the individual members, who are called shareholders or stockholders because they hold shares of stock representing their participation in the corporation. Stockholders are not liable for the debts of the corporation beyond the amount of their participation. Thus, if a stockholder has subscribed for ten shares of a new corporation, each of a hundred dollars nominal value, once he has paid his thousand dollars to the corporation it has no further claim on him and if it goes bankrupt its creditors lose, without having any right of recourse to the stockholder. This feature of *limited liability*, as it is called, and the fact that the law places no limit on the size of a corporation or the number of its members, make it possible for very large enterprises to take corporate form. Most large private concerns are corporations.

¹ The name *trust* is used widely also to denote a very large business, commonly a corporation, or group of corporations which are closely integrated, so that they work together. It is in this connection that people speak of *anti-trust* legislation. The reason for this usage of the word *trust* is that many of the earlier large-scale business enterprises took the form of trusts, and are described in the text.

Many corporations raise funds from more than one class of owners of capital. Mortgage bonds, preferred stock and common stock may be issued to those who prefer these various types of securities.

Bonds are certificates of indebtedness or promises to pay, issued by a corporation and running for a term of years. Commonly bonds are secured by a mortgage on the corporation's assets, which is placed in the possession of a body of trustees appointed to represent the bondholders. This mortgage gives the trustees the right to foreclose, that is, to seize and dispose of the mortgaged property in the event that the interest on the bond remains unpaid or the capital sum or principal is not repaid when promised. If the assets are sound and saleable, a bond is considered a very safe security and accordingly bears a low interest rate. However, assets are not always saleable at a figure that will recoup any large percentage of their cost. For example, the roadbed and tracks of a railroad which cannot be operated at a profit are not worth much for any other purpose. The interest on bonds is fixed, generally, and does not depend on the profits of the enterprise that issues them, although some corporations issue what are called *income bonds*, the interest on which is conditional on profits being earned.

Preferred stock is issued to members or stockholders who are given some priority over the remaining stockholders. Bondholders take precedence over the preferred stockholders as to income and assets, but in law bondholders are outside creditors of the corporation, not members of it. Like bond interest, preferred stock dividends are usually of a fixed percentage. They are charged against the corporation's profits before the common stock becomes entitled to any dividends and often the principal represented by preferred stock must be repaid before the common stockholders get back their capital, in the event that the corporation's business is brought

to a close. Some preferred stock is *cumulative*, being issued with the condition that dividends which cannot be paid in years when there are no profits become a charge against profits later. *Non-cumulative* preferred stock does not carry this provision. In other cases preferred stock is *participating*, that is, after it has received its fixed dividend it is given the right to share in any profits that remain.

Common stock takes the remainder of the profits, after the preferred dividends have been met, although considerable discretion is allowed to the directors of a corporation regarding the declaration of dividends out of these remaining profits, with the result that dividends may not be paid on the common stock for a considerable time, although the corporation is making sufficient profits to pay them. The common stockholders are entitled to the balance of the corporation's assets, when its business is brought to a close, after bonds have been repaid and preferred stockholders have received back their capital. When an enterprise is successful, the profits that accrue to the common stockholders may be very large and their dividends may be high. For this reason common stock is a favorite medium of speculation. In a time of rising prices, as a general rule, common stockholders are favored because the return obtained by bondholders and preferred stockholders remains fixed, leaving a large residue of profits to be shared by the common stockholders. But if the enterprise proves unsuccessful, the common stockholders may receive no dividends and their capital may be lost.

Both preferred and common stocks are issued in the form of shares of particular amounts, such as ten or a hundred dollars, or as what are called *no par* shares, which are of no special amount. Bonds are often issued in units of a thousand dollars, though there are other sizes, and commonly they have attached what are called *coupons*, which have to be presented in order to claim the interest when it falls due.

The corporate form of business organization is very suitable to large-scale enterprise. It makes possible the gathering together of the capital of innumerable small investors, while allowing the individual investor to spread his risk by investing in the stock of a number of corporations. However, the majority of corporations are small; they have been formed in order to secure the other advantages that attend incorporation, such as limited liability, perpetual life and the easy transfer of ownership, none of which is available to the partnership.

The disadvantages which result from large-scale enterprise as such, which frequently are found in corporations because they are large enterprises, are considered in Chapter 8.

THE CO-OPERATIVE

State laws provide means whereby groups of those who wish to engage in business for the purpose of satisfying their wants for particular goods or services may register as co-operatives. "Co-operation" means "working together" but, although there have been some co-operatives whose members worked together, usually in a modern co-operative a staff of workers is employed to operate the enterprise, and a board of directors is selected from among the members to deal with the general problems of management, exactly as in a corporation.

But co-operatives differ from corporations in that membership remains open to all and is not confined to the original subscribers for shares and those to whom these shares have been transferred subsequently, as in a corporation. Usually the subscription of each member to the funds of the co-operative is small. Shares may be of five dollars in value, and even this small sum may be paid by instalments and perhaps partly out of patronage dividends. Each shareholder has one

vote in meetings, regardless of the number of shares he owns. As a result, co-operatives have a more democratic organization than corporations. Shares in co-operatives receive a fixed interest, any profits remaining being disposed of by the directors as dividends proportionate to purchases (in the case of a supply co-operative) and sales (in a marketing co-operative) made through the co-operative, after a certain sum has been placed in reserve. These dividends are referred to commonly as patronage dividends, because of the manner in which they are calculated. Unlike corporation shares, which are dealt in on stock exchanges, shares in co-operatives have no free market but are usually sold by the co-operative to another member or repurchased by the co-operative when a member leaves the district or wishes to withdraw for other reasons.

In this country the co-operative is active in the provision of farm supplies and the marketing of agricultural products, in insurance and savings banking (where the co-operative is called a *mutual*), and in building and loan finance. Some of these types of enterprise are discussed briefly in Chapter 18.

In some foreign countries, consumers' co-operatives handle a large percentage of retail goods, such as groceries. Although this form of co-operative exists in America, chiefly along the Atlantic seaboard, as yet it has not developed enough to be of very great importance.

THE PUBLIC BODY AS A BUSINESS ENTERPRISE

Charitable and educational bodies sometimes operate commercial undertakings as sidelines. Some government authorities do the same. In many government enterprises the business purpose is the primary one. Extension of this type of enterprise is advocated by socialists, here and elsewhere.

The post office is the best known government commercial

undertaking. The Tennessee Valley Authority, which furnishes electricity to a large area, is another example. Numerous municipalities own local water-supply enterprises and street railroads. Publicly-owned toll bridges are common. In Canada one of the two important railroads is owned by the dominion government, and certain of the provinces operate telephone systems. Municipal ownership of electricity and gas enterprises exists in many localities in America and elsewhere.

Some of these organizations are operated by the central and local governments which own them, through a department headed by a responsible official. The post office is an instance. In other cases a corporation is established, with the government or its trustees holding all the stock and appointing the directors. This plan is followed in the cases of the Tennessee Valley Authority and the Canadian government railroad system. The principles underlying government operation of trading undertakings are discussed in Chapter 10.

THE MIXED ENTERPRISE

In some instances private and government enterprise are combined in one business unit. The outstanding example of such an arrangement in the United States is the reserve bank system. The stock of the reserve banks is owned by the commercial banks in their various areas, that is to say, by the privately-owned banks which undertake banking business for the general public. The reserve bank directors are appointed partly by the commercial banks and partly by the central board of the reserve system, which itself is selected by the federal government. The reserve banks were established to control the commercial banks in the interest of the public and it was thought proper to give both the commercial banks and the government representation on their directing boards.

Sometimes private enterprises have become mixed through

the subscription of additional capital by the government in periods of difficulty. This occurred with the German banks in the financial crisis of the early 1930's. The American government subscribed capital to the commercial banks of this country in the 1930's, also. Fears on the part of private bankers in the United States that this mixing of ownership might lead to dual control of the commercial banks was one of the factors which led the institutions receiving government capital to repay it as quickly as possible. Mixed ownership of public utilities has been common for many years in Europe.

The essential feature of mixed ownership, as considered in this chapter, is that *control is divided* between the government and private stockholders or other private individuals.

BUSINESS ADMINISTRATION

Once we leave the single enterprise and the small partnership, we find a division of function in business organization. Commonly there exists a policy-making board, called the *board of directors*, composed of individuals selected for their business acumen, their power to bring customers to the concern, or their interest in the success of the enterprise, as shareholders or, in publicly-owned organizations, as representatives of public bodies. Beneath these men are salaried *executives*, who are charged with carrying out the general decisions reached by the board of directors. Below these again are department chiefs, buyers, salesmen and similar employees, down to the lowest grade of paid worker.

In such an organization there is room for extensive specialization, with the benefits it confers. But the resulting separation of ownership, management and operation necessitates an elaborate organization for transmitting questions and decisions, preserving initiative by reward systems, and controlling dishonesty and waste, which are not required in

the single enterprise or the small partnership. But these differences spring from size rather than from form of organization; they are dealt with as a problem of size in Chapter 8.

In practice those who control co-operative and government enterprises frequently have shown themselves unwilling to pay their higher executives salaries which compete with those given by corporations, and in consequence often have had to see some of their best men resign to enter other employment. This seems inevitable in a competitive system. The profits of a successful large-scale enterprise are great, and its board of directors may give an efficient executive a far larger salary than would be practicable in a co-operative or government enterprise. Most members of co-operatives and the bulk of the voters who choose government bodies are comparatively poor people, and are unwilling to sanction salaries which are far in excess of their own incomes.

Through trading in corporation shares, directors and other insiders are sometimes able to make large profits. Often these profits are made at the expense of uninformed shareholders, through advance knowledge of the probability of favorable developments in the affairs of the corporation.

The issuance of stocks and bonds provides opportunities for abuse, also. Information given out may be insufficient for uninformed shareholders and outsiders to obtain an adequate view of the corporation's position, or these persons may not possess the technical knowledge of accounting necessary to understand the published statements. To avoid the risk of mistakes and losses, outsiders frequently are compelled to employ experts to analyze these statements. In recent years laws have become considerably more stringent on the issuance of securities. Much more information than was formerly required must now be presented. Yet it may be doubted whether the ordinary investor, without expert

assistance, is able to understand many of the statements prepared for his benefit.

SUMMARY

Business enterprise is organized in various ways. In fields such as agriculture, the single enterpriser and the family unit predominate. The partnership is important in the professions and certain other fields. A peculiarity of the laws of Massachusetts makes the trust significant in that state, but most large-scale private enterprises in this country are organized as corporations. Co-operatives engage in marketing farm produce, in insurance, savings-banking and other business. The post office and the Tennessee Valley Authority are examples of government operation, while public and private enterprise is combined in the reserve bank system and in some foreign concerns. The special features of these different types of organization are discussed.

EXERCISES

1. If a stockbroker or investment dealer is located in your community, ask him to let you see a copy of a prospectus published in connection with a recent issue of corporation stock or bonds. Note the information this contains. If you are unable to see a full prospectus, examine one of those published in summary form in the financial pages of newspapers.
2. Ask also if you may see a stock certificate issued by a corporation which has both preferred and common stock. Usually on the back of such a certificate there is printed the conditions of the preferred stock issue. Ascertain the rights of the preferred stockholders in regard to priority of income and of principal, and their voting rights.
3. If there is a co-operative in your community, ask at its office for a copy of the membership rules or any other descriptive information.

PROBLEMS

1. Suppose that a co-operative grocery store is being established in your community and your family is asked to join. List any benefits which may be expected, also any disadvantages.
2. Do you think that the railroads would be run better if they were owned by the government? Why?
3. The owner of a furniture store in your community says he is thinking of incorporating his business in order to obtain the advantage of limited liability. Mention any other *pros* and *cons*.

CHAPTER 8

THE THEORY OF PRODUCTION FOR PROFIT: COMBINATION OF THE FACTORS OF PRODUCTION

Economic theory has been developed largely on the basis that the enterpriser is in business primarily for the income or profit which he gets from it and that he will endeavor to maximize his profit. There is a large measure of truth in these assumptions. It will be pointed out later that profit is not the only motive in private enterprise and that it is not even the main motive in co-operatives and government business. But we shall begin our study of production theory with an examination of production for profit.

THE PROPORTION OF FACTORS TO EACH OTHER

A simple approach to the theory of production is to take an example from conditions with which almost everyone is familiar. For instance, we may ask what happens when a simple horticultural experiment is made. We may think of a uniform area of garden land, divided into plots of equal size, as alike as possible in such matters as soil, water supply and shade. Then we inquire into the results obtained by the application of different quantities of seed.

Because the example is familiar, we know, to some extent, what results to expect. On a plot which gets no seed, there can be no crop. Where a small quantity of seed is sown, the yield is likely to be negligible because the crop plants fail to compete with the vigorous weeds which spring up around them. On the other hand, a very heavy seeding probably will show poor results because the plants crowd each other so much that many of them do not get sufficient water or sunlight. Between these two extremes we may expect the results

to vary. Somewhere there will be a best point, which a botanist would call the *optimum*—the best rate of seeding under the particular conditions applicable to the experiment. Had the seed been sown on different types of soil or in years when weather conditions had varied, no doubt the results obtained would have differed. If we want to lay down general rules regarding seeding rates, we must conduct such experiments under a wide range of conditions. It is precisely because such experiments have been conducted many times that we are able to say beforehand that the results of very heavy seedings probably will be poor. By accident or design, almost every farmer and gardener has accumulated information on the matter, to say nothing of that secured under the more rigorous conditions of laboratory experiment. We may proceed now to tabulate our imaginary data.

TABLE 7. PRODUCTION DATA, GARDEN EXPERIMENT

(1)	(2)	(3)	(4)
Pounds of seed applied to a garden plot	Yield from the plot, in pounds	Yield per pound of seed applied	Additional yield resulting from addition of a pound of seed
0	0	0	0
1	8	8	8
2	22	11	14
3	34	11.3	12
4	41	10.2	7
5	44	8.8	3
6	43	7.2	-1

Certain terms are used with respect to such data. *Total product* is self-explanatory. In this instance, it is the total yield from the plot. *Average product* is the total product divided by the number of units of whatever factor of production is being varied, these units having been used to obtain the total. Here it is yield per pound of seed applied. *Marginal*

product here is the additional product which results from adding another unit of the variable factor. In this case it is the addition made to the product by sowing another pound of seed. Column 2 in our table gives the total product, column 3, the average product, and column 4, the marginal product.¹

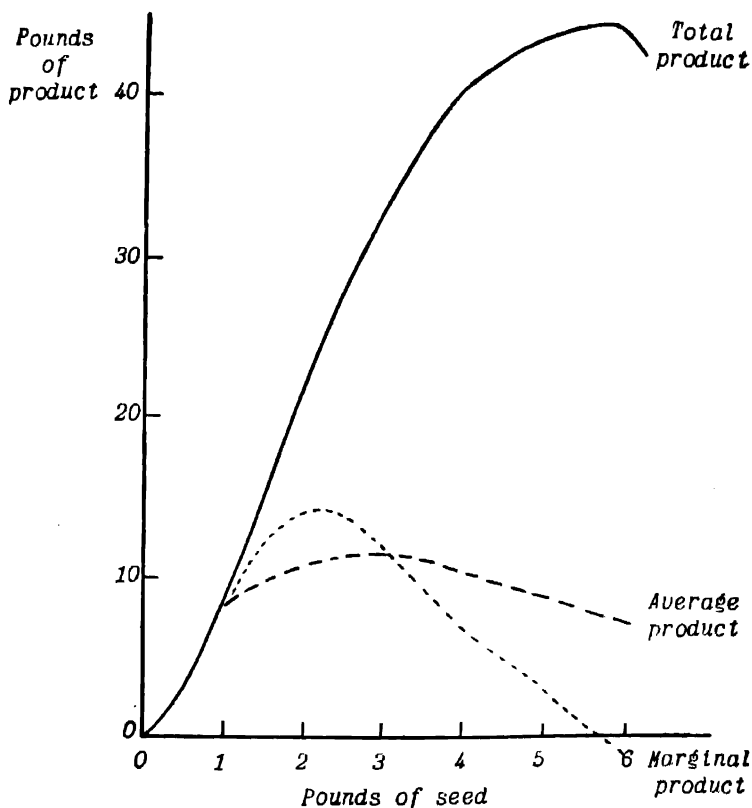


FIGURE 11. PRODUCTION CURVES, GARDEN EXPERIMENT

¹ In technical publications, the terminology is rather complicated, a distinction being made between the expansion of output by adding further units of productive factors (the present case) and that measured in output units (considered later in this chapter).

These results may be plotted as a graph, which would appear somewhat as shown in Figure 11. In practice, it is unlikely that curves so smooth as those in the figure would be obtained, although probably if the seed were applied in very small units and the experiment repeated many times, smooth curves could be drawn from the results.

The shape of the production curves can be understood if two points are borne in mind. (1) The total product rises so long as the marginal product is positive, from which it follows that the top of the total product curve is vertically above the point where the marginal product curve crosses the zero base-line. (2) So long as the marginal product is above the average product, the average product rises. Once the marginal product falls below the average product, the average product declines. Therefore the marginal product curve crosses the curve of average product at the top of the latter curve.

The law of diminishing returns and the law of increasing costs

The figures are as indicated because we have assumed the operation of what economists call the *law of diminishing returns*. This states that *if one or more factors of production are kept constant in quantity and one or more other factors are varied, to carry the application of the variable elements beyond a certain point will cause the returns or product to fall off*. In our experiment the factors kept constant were the land and equipment, the fertilizer and labor of cultivation. The seed was the variable factor. The labor involved in seeding and harvesting the crop was ignored for simplicity, although it might have been included with the seed, because it also varies with output. The illustration makes clear that there are really two points of diminishing returns, according to whether the average or the marginal product is considered.

Marginal returns fall after the second pound of seed in our example, average returns after the third.

The law of diminishing returns is very important. Ever since Abram parted from Lot because each of them had such large flocks and herds that the same area of land would not support both of them, men have been familiar with this law. What it means is that it is uneconomical to push production too far with one or more of the essential factors in short supply. When observers say that there are too many people in China or that a giant industrial plant is too big, generally it is this general principle that they have in mind.

We should note that the principle may be stated the opposite way around. Instead of looking at the returns or product side, we may think of the cost of obtaining this product. We then inquire not how much product results from a pound of seed but how much seed must be sown to get a pound of product. Just as we discovered that as we added more and more pounds of seed, the product fell off, so now we see that, as we push the product higher and higher, the quantity of seed that is required for each pound of product rises. Looked at from this viewpoint, the law of diminishing returns is seen to be a *law of increasing costs*. And it may be stated in this fashion: *if one or more factors of production are kept constant in quantity and one or more other factors are varied, carrying the application of the variable factors beyond a certain point causes costs to increase*. The data relating to the gardening experiment are not very suitable to show the working of the law as stated in this manner and, for this purpose another example will be studied later.

The point of maximum profit

The information shown in Table 7, useful as it has been in revealing the operation of the law of diminishing returns, is inadequate to answer the question a gardener is likely to

have in mind in connection with such an experiment, namely, "How many pounds of seed would it pay to use in the circumstances?" Obviously this is an important point to any enterpriser. We have calculated the product per pound of seed applied and have found the product added by each extra pound of seed, but to answer the gardener's question we require to know something about prices. Let us make the suppositions that seed costs forty cents a pound, that a dollar covers all other expenses for each plot, and that the product brings ten cents a pound.² On this basis, we can make a new calculation.

TABLE 8. POINT OF MAXIMUM PROFIT, 1

Number of pounds of seed applied	Cost of seed \$	Total cost \$	Total revenue \$	Total profit \$
0	...	1.00	...	- 1.00
1	0.40	1.40	0.80	- 0.60
2	0.80	1.80	2.20	0.40
3	1.20	2.20	3.40	1.20
4	1.60	2.60	4.10	1.50*
5	2.00	3.00	4.40	1.40
6	2.40	3.40	4.30	0.90

* Point of highest profit.

Here we have the answer the gardener wants. With suitable warnings regarding the placing of too much reliance on the results of a single experiment, we can tell him that four pounds represents the most profitable seeding.

We should obtain the same results if, instead of comparing total cost and total revenue, we compare *marginal cost* with *marginal revenue*: that is, the additions that are made to

² There is nothing unusual about this disparity between the cost of seed and the price of the product. Hybrid corn used as seed, for example, sells for many times the price of the product.

cost and the additions that are made to revenue by sowing successive pounds of seed on the plots. Thus:

TABLE 9. POINT OF MAXIMUM PROFIT, 2

Number of pounds of seed applied	Addition made to cost by last pound added (marginal cost)	Addition made to revenue by last pound added (marginal revenue)	Profit obtained on last pound added	Cumulative net profit after fixed cost of \$1.00 is deducted (total profit)
0	...	...	...	— 1.00
1	0.40	0.80	0.40	— 0.60
2	0.40	1.40	1.00	0.40
3	0.40	1.20	0.80	1.20
4	0.40	0.70	0.30	1.50*
5	0.40	0.30	— 0.10	1.40
6	0.40	— 0.10	— 0.50	0.90

Point of highest profit.

By comparing marginal costs and marginal revenues, it can be seen at a glance that the first, second, third and fourth pounds of seed pay to apply. The first pound brings in eighty cents and costs forty cents, the second brings in \$1.40, the third \$1.20, and the fourth seventy cents, while in each case the cost is forty cents. But the fifth pound, which also costs forty cents, would bring in only thirty cents and so to use it would result in a loss of ten cents. The sixth pound actually causes a loss of revenue in addition to the cost of the seed.

This last calculation (Table 9) gives us a rule that is of general application in production undertaken for profit. *An enterpriser who is aware of the facts will carry the application of a variable factor to the point where marginal revenue is equal to marginal cost, so that further additions to output add nothing to his profit.*

At this time something should be said about non-variable or fixed costs, that is, costs that do not vary with the output.

In the calculation of Tables 8 and 9, it was assumed that a dollar was spent on every plot besides the cost of the seed. It was spent even on the plot to which no seed was applied and presumably represents the rent of the land, the cost of equipment and fertilizer, and of labor spent on cultivation.

Later it will be shown more fully that the difference between fixed and variable costs is not something hard and fast but depends largely on how much output is being taken into consideration. In the case of our garden, much turns on whether we are thinking of the single crop whose results are being studied, or of a number of crops. The cost of zero output, which is shown as a dollar on the table, since this much has been spent on the unseeded land, obviously can be lessened as the enterpriser becomes able to make adjustments such as ceasing to fertilize or cultivate this land. No enterpriser will enter a business in which he does not expect all his costs to be returned to him, so that we can say that *total expected revenue must cover total expected cost at the time the venture begins*. But there is no rule which says that total revenue will in fact cover total cost. Enterprisers often make mistakes, a point that will be discussed later.

The effect of price changes

Let us return now to our gardening example. A little thought will reveal that the fourth pound of seed was found to maximize profit merely because of the particular prices which we assumed for seed and product. Other prices may show different results. A fall in the price of seed, or a rise in the price for which the product is sold, may be expected to encourage the gardener to sow more thickly. We know that the fifth pound of seed adds three pounds of product, so that if three pounds of product can be sold for a greater sum than represents the cost of a pound of seed, it will pay to use this fifth pound. Seed at the lower price of twenty-five cents a

pound, while the product still sells at ten cents, will give this result. So will an increase in the price of the product to fifteen cents a pound, if the cost of seed remains at the old level of forty cents. Thus:

TABLE 10. EFFECT OF ALTERATION IN PRICES, 1

Number of pounds	Addition made to cost by last pound added \$	Addition made to revenue by last pound added \$	Profit ob- tained on last pound added \$	Cumulative net profit, fixed cost deducted \$
<i>Case 1. Cheaper seed</i>				
0	...	...	...	- 1.00
1	0.25	0.80	0.55	- 0.45
2	0.25	1.40	1.15	0.70
3	0.25	1.20	0.95	1.65
4	0.25	0.70	0.45	2.10
5	0.25	0.30	0.05	2.15*
6	0.25	- 0.10	- 0.35	1.80
<i>Case 2. Dearer product</i>				
0	...	...	...	- 1.00
1	0.40	1.20	0.80	- 0.20
2	0.40	2.10	1.70	1.50
3	0.40	1.80	1.40	2.90
4	0.40	1.05	0.65	3.55
5	0.40	0.45	0.05	3.60*
6	0.40	- 0.15	- 0.55	3.05

* Point of highest profit.

If the balance of seed cost and product cost is shifted in the opposite direction, less seed will be profitable. Since the fourth pound of seed adds seven pounds to the product, it follows that any pair of prices, which result in a rise in the cost of a pound of seed above the sale price of seven pounds of product, will make the fourth pound of seed unprofitable.

Seed at seventy-five cents a pound, with the product remaining at ten cents, or seed at the original price of forty cents and the product selling for five cents, will do this.

TABLE 11. EFFECT OF ALTERATION IN PRICES, 2

Number of pounds	Addition made to cost by last pound added \$	Addition made to revenue by last pound added \$	Profit obtained on last pound added \$	Cumulative net profit, fixed cost deducted \$
<i>Case 1. Dearer seed</i>				
0	...	...	...	— 1.00
1	0.75	0.80	0.05	— 0.95
2	0.75	1.40	0.65	— 0.30
3	0.75	1.20	0.45	0.15*
4	0.75	0.70	— 0.05	0.10
5	0.75	0.30	— 0.45	— 0.35
6	0.75	— 0.10	— 0.85	— 1.20
<i>Case 2. Cheaper product</i>				
0	0.40	...	...	— 1.00
1	0.40	0.40	0.00	— 1.00
2	0.40	0.70	0.30	— 0.70
3	0.40	0.60	0.20	— 0.50*
4	0.40	0.35	— 0.05	— 0.55
5	0.40	0.15	— 0.25	— 0.80
6	0.40	— 0.05	— 0.45	— 1.25

* Point of highest profit. But see text regarding Case 2.

Like the law of diminishing returns, from which of course it follows, this situation is a fairly general one. It is a well-known phenomenon in both agriculture and manufacturing industry that higher prices tend to increase output and that lower costs have the same result, while higher costs and lower prices cause production to contract.

It will be noticed in the lower set of figures included in

Table 11 that the final column of total profit shows a minus value at every output level. Evidently if the product sells at so low a price as five cents a pound, with seed at forty cents, the enterprise cannot be made to pay, whatever the rate of seeding. The best point here is one of minimum loss, not maximum profit. Under actual conditions, no one who is in business for profit will cultivate a garden like our imaginary one, if he expects such a result.

We must assume therefore that our gardener believes that his operations will bring him a profit. With this expectation, he commits himself to the enterprise, rents a garden, and purchases the necessary equipment. Will he give up the enterprise if it returns him a loss? Not necessarily, at least not immediately. Although the last column shows a loss at all rates of seeding, examination of the next to the last column (profit obtained on last pound added) shows that so long as not more than three pounds of seed are used, the variable costs (in this case, the costs of seed) are covered. What is not covered is the fixed cost. So long as the fixed cost remains fixed, the enterpriser will do best to sow three pounds of seed. This seeding will yield him a return above the variable costs, thirty cents from the second pound and twenty from the third, totalling fifty cents. As a result, if he sows three pounds of seed, this margin of fifty cents will be available to offset partly the dollar of fixed cost, which otherwise will be wholly lost. For the time being, therefore, the gardener is in the unfortunate position of having to operate at a loss because, if he closes down, his loss will be greater. A railroad which has been taken over by its bondholders because it cannot pay their interest, but is continuing in operation since there is less loss in operating it than in closing it down, exemplifies this condition in practical life. America has had numerous examples of this situation on both a large and a small scale.

Yet certainly the gardener will not be content to take losses

any longer than can be helped. The low price of five cents for the product may be temporary only, and his experience may tell him that improvement is to be expected. But if he expects the existing price situation to continue, he will see what he can do to improve his position. If he waits long enough, some of the costs included in the dollar that was fixed over a short period will be likely to prove variable. Once he reaches the point where he can leave the business with less loss than he will incur by staying in it, he will give up the enterprise if he thinks there are no prospects of future profit. However, he may be able to make adjustments before this point is reached which will permit him to remain in the business. The expiration of his lease on the garden, for instance, may afford him an opportunity to pass on to the landowner a substantial part of the burden in a reduction of rent.

Note on alternative or opportunity cost

The position of the gardener, who has to decide whether he will continue his enterprise or abandon it, raises the question of what economists call *alternative* or *opportunity costs*. Obviously it is pertinent to the gardener's decision what other openings he has for his labor and equipment. His produce must bring him a sufficient revenue to cover not only the expenditure that he incurs from day to day in growing it but also the amount that his labor and equipment can command in the most attractive other opportunity open to them. In other words, the variable costs of his calculation will have to include what are called opportunity costs.

The point may be illustrated by reference to another example. A businessman, believing that a patent will prove profitable, spends \$100,000 in developing it. He finds that the sales do not justify this large expenditure. Will he abandon the enterprise? After making inquiries, he finds that

the equipment which he has acquired to develop the patent will sell for \$20,000 for another purpose. Therefore a sum that represents a satisfactory return on \$20,000 of capital has to be looked upon as a cost, described as an opportunity cost, in the industry in which he is engaged. Evidently, so long as the sales of the patented product cover the variable costs of producing it, together with what the enterpriser regards as a reasonable return on the \$20,000 that the equipment will fetch in the alternative use, the business is worth continuing.

Costs per unit of output

Before leaving the general theory of production for profit, it will be well to examine further the subject of costs. Earlier in the chapter it was pointed out that costs could be expressed per unit of product as well as product expressed per unit of costs. Stating product per unit of cost, we got the law of diminishing returns, which turned out to be a law of increasing cost, when cost was expressed per unit of product. Since in economics both have their purposes, it is necessary to inquire more fully into this latter aspect.

Our gardening example was unsuitable for the purpose. It is easy enough to vary the cost of gardening, that is, to change the number of pounds of seed applied in our experiment. But it is impossible for a gardener to ascertain in detail what it will cost him to produce successive units of output. He sows his pounds of seed, then waits to see how much product results from each pound. In an entirely different position is a manufacturer who is able to decide with considerable certainty what his output will be in a particular period.

To illustrate this aspect let us consider the position of a plant manufacturing standard automobile trailers. We will suppose that its general cost picture is much the same as

was the case with the garden. Within small ranges of plant output, costs per unit of product may be considered to fall off, but in ranges of higher output, costs per unit of product show an increase.

This is not difficult to understand. As production approaches the maximum capacity of the plant, the law of diminishing returns begins to operate. More labor is expended on the same equipment, and output does not rise in proportion. Breakages become more frequent, because the machines are being worked at a faster rate or under heavier loads than those for which they were designed. Then market factors may exert an influence, as is the case when overtime wages have to be paid at rates above those applicable to normal labor. The same is true at the other end of the output scale. A plant constructed for an output of six or eight expensive trailers per month is unlikely to be operated economically on a much lower output schedule, since labor may be wasted and it may be impossible to buy raw materials cheaply if they are purchased in small quantities.

We may suppose, therefore, that the figures given in Table 12 are correct.

In graphical form, these data appear as shown in Figure 12. In practice again it is unlikely that curves so smooth as these will be obtained.

The shape of the curves follows from our assumption that costs fall in the lower ranges of output and rise in the higher ranges. The marginal cost curve crosses the average cost curve at the lowest point of the latter, because marginal cost is cost newly-added. If cost is added that is above the average, the average will be increased.

The most profitable output can be ascertained from the principle stated on page 91. Profit is maximized at the output where marginal revenue equals marginal cost. Where this will be in our example depends on the price the trailers

TABLE 12. PRODUCTION DATA, TRAILER FACTORY

Number of trailers manufactured in a month	Total cost	Cost per trailer (average cost)	Cost of last trailer (marginal cost)
	\$	\$	\$
0	4,000	....	....
1	8,100	8,100	4,100
2	11,200	5,600	3,100
3	13,700	4,567	2,500
4	15,800	3,950	2,100
5	17,800	3,560	2,000
6	20,000	3,333	2,200
7	22,400	3,200	2,400
8	25,300	3,162	2,900
9	29,200	3,244	3,900
10	36,400	3,640	7,200

bring in the market. If each trailer sells for \$3,200.00, then eight trailers per month will give the best result, because the eighth costs \$2,900 and brings in \$3,200, while the ninth will cost \$3,900 and still will bring in only \$3,200. Trailers will have to sell for over \$3,900 if it is to be profitable for this firm to produce the ninth, in view of its cost data. At a sale price of \$2,800, the seventh (costing \$2,400) will make a profit, but not the eighth (costing \$2,900). At so low a price as \$2,800, the firm will not be meeting all its costs. The average cost figures tell us where all the costs are covered.³ The average cost of the seventh trailer is \$3,200, which is decidedly higher than \$2,800. The lowest price for which trailers can be sold while meeting all costs is \$3,162, repre-

³ To meet all costs, total revenue must equal total cost. Since average revenue is merely total revenue divided by output, and average cost is total cost also divided by output, it follows that all costs are met when average revenue equals average cost.

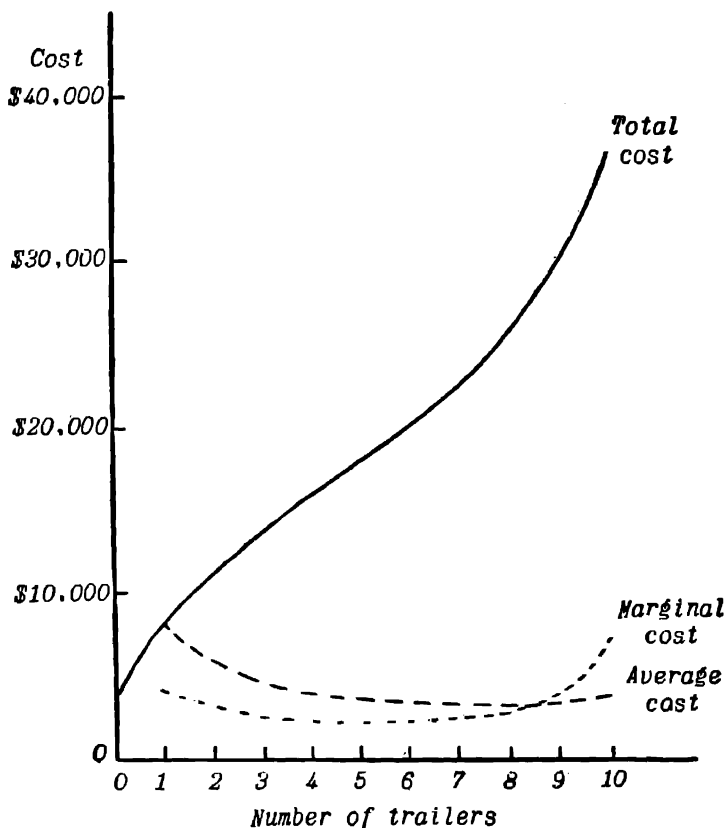


FIGURE 12. COST CURVES, TRAILER FACTORY

senting the lowest figure of average cost. But if, for the time being, no better price for trailers than \$2,800 can be secured, this firm still will do better to continue in production than to shut down. By producing seven trailers to sell at \$2,800 each, the firm will lose \$2,800, or \$400 per trailer; its total revenue will be \$19,600 (\$2,800 per trailer) and its total cost will be \$22,400 (\$3,200 per trailer) but the \$2,800 loss

is smaller than the loss of \$4,000 that will be incurred if there is no output.

A point to be noticed in this example is that the *output of lowest cost* is not the same as the *output of maximum profit*. The point of lowest marginal cost is the fifth trailer, that of lowest average cost is the eighth. The point of maximum profit depends on the price at which the trailers are sold. If the sale price is \$2,800, the seventh trailer represents the point of maximum profit. If the price is \$3,200, the eighth trailer maximizes profit. At a price of \$4,000, the maximum profit will be obtained by producing nine trailers.

The nature of costs

Sometimes statements are made which imply that certain varieties of cost, such as those representing labor and raw materials, are necessarily variable, while others, like expenditure on buildings and machinery, are fixed. This is untrue. If we take a very short period or a small range of output, most costs are fixed. In the case of our gardener, it may be that seed is purchased in one-bushel bags, and if so, once a bag is opened, its cost is fixed for the number of crop-plants that it represents. Very likely the smallest units of labor which can be hired involve each a day's work and if workers are to be available regularly they will expect to be employed on most days. Labor is to some extent a fixed cost, therefore, over small ranges of garden output. On the other hand, when a lengthy period of time or a large range of output is taken into account, the lease expires and the gardening equipment wears out and needs to be replaced, so that the costs of land and machinery, which were fixed in the short run, now become variable.

In certain calculations, it may be helpful to identify and show separately a large element of cost which remains fixed over the period or output range that is under consideration.

For instance, it is probable that the costs of land and buildings (whether owned or leased for a period of time), and of the main items of machinery, are fixed in respect to the output that can be produced in several months, perhaps in several years. So, in connection with some of his cost studies, our trailer manufacturer may like to have this cost shown separately. In our example, we have assumed a fixed cost of \$4,000. If this fixed cost is averaged over different outputs and shown in graphical form, it will appear as in Figure 13. This

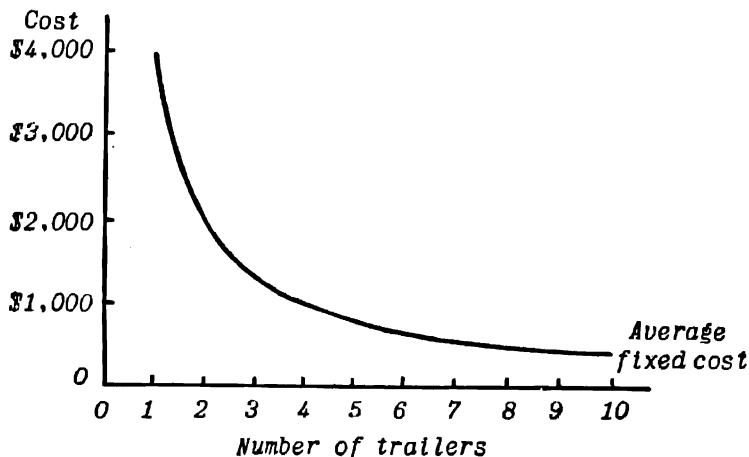


FIGURE 13. CURVE OF FIXED COST

is a rectangular hyperbola, because a fixed amount, divided by a varying amount, always gives a curve of such a nature.

The amount of the costs that are fixed during a period of several years, in the case of an enterprise such as our trailer factory, will depend largely on whether the building is owned or leased and, if rented, on the length and conditions of the lease. The building is a fixed cost for a term of years to its owner, but it is not necessarily a fixed cost against

the manufacture of trailers because it may be usable for other purposes.

The general rule can be stated that *expected revenue must cover expected variable costs*, but it operates differently in a short period than in a long one, on a small output range than a long range. In a short period or small range of output, some of the costs are fixed, like the dollar of our gardener and the \$4,000 of our trailer manufacturer, and these need not be covered for production to be worth while. In long periods and large ranges of output, many of the costs that have been fixed in respect to short periods and small ranges become variable. Given a sufficiently long period and large output range, all costs are variable and all are expected to be covered.

The situation may be illustrated by considering a railroad. With a track already built and equipped, rolling stock on hand, and men hired to operate the system, the managers may feel that a very low special rate is justified on days, or between stations, when otherwise empty coaches would be traveling. But if the staff is to be retained and the equipment operated, at least sufficient money must be taken in passenger fares and freight charges to meet the expenses that result from operating the trains, such as the wages of the train staffs and fuel costs. When the problem arises as to whether new cars and engines are to be purchased, income resulting from their purchase must be expected to cover their cost, as well as the other variable costs, or they will not be bought. If the question of a new line is raised, the managers must believe that it will yield sufficient revenue to meet its construction costs in addition to the costs of running it, or the line will not be built. Yet once it has been constructed, it will be sensible to operate the new road even though the revenue from it does not cover construction costs, provided only that the variable operating costs are met.

Examination of the published reports of corporations shows that they often operate at a loss. There are several reasons for this. In the first place, *accounts do not refer to expectations but to experiences*. Businessmen may have expected that costs and returns would justify the enterprise, although in fact they prove mistaken, because costs are more than were expected or revenue less. Second, an enterprise may be in the position that its variable costs are more than covered by revenue but *fixed costs are not being met*, so that the accounts (which include a proportionate amount of fixed costs) show a loss. This situation has been examined in detail and requires no further comment. Lastly, at times businessmen *knowingly produce under circumstances in which even variable costs are not covered*, as when they believe the unfavorable conditions are temporary and want to hold together their labor forces and customers in the expectation that later profits will justify such a course.

Joint costs

Commonly it happens that an enterprise produces more than one product and the question arises as to how much of its cost is attributable to each. Often what is in mind is that the entire cost should be apportioned between the products in some manner. Almost certainly it is found in such cases, however, that while some costs can be attributed to one product in the sense that they would not be incurred if this product were to be disregarded, there are others that are necessitated by the whole enterprise and would continue even though one of the products is abandoned. Costs of the first class are called *specific*; those of the second are referred to as *joint*. Sometimes the products are so closely linked together that one of them cannot be obtained without the other, as is the case with cotton fiber and cotton seed, but at other times they are associated in production merely as a matter of

convenience or economy, as when a farmer grows several crops or a railroad train carries different classes of freight. The term *joint products* is employed in this connection, either to describe products of the first of these two types or of both. Examples will illustrate the situation.

A cattle raiser produces beef and hides together. Neither of these products can be obtained without the other and they leave the farm together as the live animal is shipped to a packing plant. Evidently beef and hides are joint products. A considerable part of the feeding costs are specific to beef because less feed will be used if only hides were wanted. But probably the only farm costs that are specific to hides are the small sums spent to protect the hides from fly damage. The same is true of the costs incurred at the packing plant. The specific costs of the hides are small, including such items as the extra labor required to remove them without damage. The specific costs of beef are larger, because much labor and equipment is involved in preparing the carcasses and shipping them to meat salesmen throughout the country. But both on the farm and in the packing plant there is sure to be a large residue of costs that are joint, attributable specifically neither to the hides nor to the beef.

The position of the grain farmer is similar to that of the cattle raiser. Wheat and straw are produced together. Costs incurred to bale the straw and ship it to market are specific to straw. The cost of cleaning the grain is specific to that product. There is considerable residue of joint costs attributable specifically to neither straw nor grain but necessary if either is to be produced.

Clearly *the price of each joint product must cover its specific variable costs*, the term variable being taken in the sense given to it earlier in this chapter (that is, what is variable will depend on the length of time and range of output involved). And *the combined revenue from both or*

all the products must cover the entire variable cost. These rules apply not only to products which are linked so intimately as are beef and hides but also to those whose association is only a matter of the enterpriser's decision. Every class or item of freight hauled by a railroad must return to the railroad company the specific variable costs of handling it and the entire revenue of the railroad must cover the total variable costs of the enterprise. Further than this we cannot go. Even the fact that, given sufficient time, the farmer may be able to grow varieties of wheat yielding a larger or smaller proportion of grain to straw, or the railroad company adjust its equipment so as to be able to handle more of one class of traffic and less of another, only means that here costs that are joint in the short run become specific in the long run.

No-cost factors

Sometimes questions are raised regarding the employment of factors of production that can be had free of charge. It is asked how much land will be used if fertile land is so plentiful that it commands no rent or how much capital will be employed if interest is non-existent. The answer follows from what has been learned in this chapter. Following the rule that the employment of any factor is pushed to the point where its use ceases to be profitable, the employment of a no-cost factor will be continued to the point where nothing further is added to revenue, that is, where its productivity in terms of money becomes zero. If we so desired and possessed the necessary apparatus, we could ascertain how much would be added to the product of our garden plots by furnishing them with air in cubic foot doses, just as we did with the pounds of seed. No doubt we should find that, while the first lots of air are very beneficial to the crop, ultimately a point is reached where additional air confers no benefit. Air being a free good, we should advise the

gardener to use at least this much. But because air is a free good, we do not need to make such calculations. The same would be true of land and capital if they too could be had free of charge.

THE SIZE OF THE ENTERPRISE

Hitherto we have been considering problems relating to the proportion of the factors of production to each other, such as how much seed it is best to combine with a certain area of land in producing a garden crop. Nowhere have we given attention to the problem of size of garden, still less the question of how many gardens can best be combined under one supervision. How big should be the producing unit—the garden, the farm, the mine, the factory—is one problem. How many producing units should operate—how many shoe factories a shoe manufacturing corporation should control—is another question. We notice that the ordinary plumber has a small establishment but the typical manufacturer of plumbing fixtures has a large one. We see too that medical practices are not organized in chains but that grocery stores frequently are. What explains such a situation?

Size of the producing unit or plant

If we ask ourselves what advantages a farmer, a doctor, a plumber or a manufacturer will obtain from an increase in the size of his farm, practice or factory, we have no difficulty in identifying a number of benefits. Labor can be specialized to a greater extent, so that a farmer or doctor can concentrate on his job and (as an instance) can hand over his accounts to a bookkeeper. The manufacturer can use labor that is specialized in a higher degree, not only in production but in making sales and conducting research in relevant fields. All of them can make greater use of labor-saving equipment. One need only compare in efficiency the

modern automobile factory, organized as it is on mass-production lines, with its subsidiary plants making specialized articles and its nationwide sales and service organization, with a small factory engaged in building sailboats in a seaside village, to realize what is involved here.

Yet there are disadvantages attending an increase in size. As the production unit becomes bigger, supervision is less personal, managers lose touch with their staffs and customers, and a larger market becomes necessary, involving expensive haulage of raw materials and finished products.

How these factors balance themselves determines the most economical scale of operation. In some fields, the disadvantages of growth outweigh the advantages, so that the typical business remains small. General medical practice and farming are examples. In other cases, small-scale production would be so costly as to be prohibitive, as in the manufacture of automobiles and steel. But some doctors and farmers are always pondering the question of size. The doctor wonders whether he should hire a girl to answer telephone calls and keep his accounts, enabling him to take on more patients; the farmer considers whether he should rent additional land. With appropriate changes, the management of the automobile factory or the steel plant is examining the same question. Experience decides the answer to some extent. The farmer who takes on more land can reverse the step when his lease expires, if he so wishes, as can the doctor whose clerk-bookkeeper leaves his service to marry. Advice and example enter the picture. The farmer and the doctor tell their friends what they consider to be the results of a change, or, if the alteration appears successful, find that others imitate them. In some cases, published information is available, as through the farm-management services provided by some agricultural colleges or the work done by the Bureau of Business Research of Harvard University on the retail trade. Ac-

counts give some guidance regarding measures which already have been taken, encouraging business managers to carry them further or to retrace their steps, according to the degree of success that appears to have attended them. Always the test set by the businessman who is searching for profit is that which we have studied in the present chapter, namely, will the change increase profit or diminish it?

Size of the managerial unit or firm

Much of what has been said concerning size of plant applies with equal force to the problem of size of firm. An enterprise which includes a number of plants has certain advantages over a firm possessing only one. Plants can be specialized for the purpose of supplementing each other more effectively than is possible if each is under separate ownership. Thus a sugar-refining company at one time operated a specially designed plant to cope with output fluctuations, with a view to being able to keep its other plants fully employed, this plan being considered cheaper than allowing output to vary in all the plants owned by the company.

Another advantage of multi-unit operation is that it affords opportunities for comparing the income and expenses of the various branches for the purpose of promoting efficiency, as commonly is done in chain stores. Also there may be an opportunity to average risks, an advantage that is claimed for branch banking by those who advocate it. A multi-unit concern sometimes employs men who are specially trained in finance and business research to advise the management. This is an advantage of large-scale operation, not of having a number of producing units, but it serves to illustrate the point that a multi-unit firm is able to secure the advantages of large size in an industry in which the optimum size of producing unit is small. An example is a grocery chain. Even

the largest grocery store, the so-called super-market, is a small enterprise compared with many in industry and commerce. In such an industry, the greatest economies of purchasing and management can be secured only by developing a large firm with numerous branches or subsidiaries. The ten-cent store is another instance.

On the other hand, large size has disadvantages as well as advantages. Decisions which require to be referred to headquarters may consume considerable time. Time is lost by executives in traveling. Managers at the center lose touch with the local units. Routine is emphasized.

Competition is sometimes fierce and the arrangements which are most efficient tend to survive. For guidance in making decisions, much the same sort of data are available here as in the case of size of plant. But non-economic factors, such as the ambition of executives to act on the national stage, cannot be ignored, as of course is the case in other fields.

Both with the plant and the firm, conditions change from time to time. A size which seems best under one set of circumstances is found to be too small or too large under another. An enterprise which has been built up and managed successfully by a particularly able man may prove too much for his mediocre successors and therefore fall to pieces. The large specialized farms which appear to be the most efficient producing units in periods of prosperity have shown less power of surviving depression than smaller subsistence enterprises.

In farming the replacement of the horse team by the tractor has made the larger farm the more profitable under ordinary conditions. This situation seems to have applied to industry generally. Machines all along the line have made larger sizes more economical and therefore have stimulated growth in size of plant and, in some instances, of firms.

Although firms can combine into larger units rather speedily, alteration in plant size is apt to be a more gradual process. Fixed costs stand in the way, as do, sometimes, personal and other factors. Middle-western agriculture in the last few decades exemplifies this situation. The economies made possible by use of the tractor, the combine and other machines have made the larger farms the more profitable. But frequently an operator who is anxious to extend his enterprise cannot do so because no tracts of suitable size are on the market in his neighborhood, or he rents additional land at the price of wasting in traveling time almost as much as he gains in other directions. But buildings wear out and farmers die, so in the course of time a change is effected.

THE PRACTICAL SIDE

What has been described in this chapter must be regarded as an idealized picture of the enterpriser's activities. Not only are enterprisers influenced by other motives than profit—a matter which is discussed at greater length in Chapter 10—but some of them possess very few data on subjects like cost variations and the degree to which sales are affected by selling price.

A gardener or farmer may have read an experimental station bulletin on rates of seeding. He may have himself varied the amount of seed for the purpose of discovering the best rate for his particular farm. He can draw on the experience of his neighbors. But even though, in the case of a crop which has been grown for a number of years, he knows fairly well what rate of seeding is likely to give the best crop, weather conditions and price changes enter the picture. The best rate for a dry year or a wet year may differ considerably from that which is most suitable in an average season and weather cannot be forecast long ahead with any accuracy. He reads the newspapers and perhaps attends farmers' meetings

at which the season's prospects are discussed. At times, in recent years, he has been in the position that the government has guaranteed him a certain price for a product in the current season or longer. Otherwise, however, he had to guess prices.

Data obtained by what is called *cost accounting* are helpful to those enterprisers who are able to employ this method. Almost certainly such an enterpriser as our trailer manufacturer has cost accounts in some form. He knows what in this chapter have been called total costs and, as time passes, he accumulates records which show his total costs at different volumes of output. He also acquires information regarding the sales made at different selling prices. But costs depend largely on the prices of raw materials and labor, and these he is unable to foretell with certainty, while sales are governed to a considerable extent by business conditions, which also cannot be predicted accurately.

Both the farmer and the manufacturer commonly have to make their plans for a period of time ahead. Once he has sown his crop, the farmer is committed for a year, unless indeed prices fall so heavily as to make it more profitable to leave the crop in the ground than to harvest it, as sometimes has been the case. It may be impracticable for the trailer manufacturer to change his production program or his price schedule at frequent intervals. Both these men do what they can in the circumstances, and if they make mistakes they have to remember that it is in the nature of enterprise to make forecasts and that many of these turn out to be mistaken. The problem of risk is considered later.

SUMMARY

In proportioning the various factors of production to each other in the productive enterprise, a basic element is the law of diminishing returns or law of increasing costs. The point

of maximum profit depends on costs and on the value of the product. An enterpriser who is aware of the facts will carry the application of a variable factor to the point where marginal revenue is equal to marginal cost, so that further additions to output add nothing to his profit.

At the time an enterprise is begun, the enterpriser expects total revenue to cover total cost. In general, revenue is expected to cover variable cost. Many costs that are fixed in short periods and for small ranges of output become variable in longer periods and larger output ranges. Joint cost is a problem that is important in some fields.

The sizes of the producing unit or plant, and of the firm or managerial unit, similarly are governed by costs and returns. There are advantages of increased size and also disadvantages. Moreover conditions change from time to time, so that what is the best size in one set of circumstances may not be so in another.

On the practical side, it has to be recognized that frequently the data that are available are inadequate to give the enterpriser more than a general idea regarding the point of maximum profit.

EXERCISES

1. Refer to the trailer example (pages 98-100). Suppose a fixed cost of \$4,000 when no trailers are manufactured, and that costs rise by \$3,000 for every trailer produced. Construct a table on the same lines as Table 12 in the text and draw a diagram to correspond. Compare this with Figure 12 in the text. Write down reasons for all the differences you notice between the two diagrams.

2. A library to which you have access may contain such a series as "Moody's," which gives the financial reports of leading American corporations. Prepare a table, showing the annual profits and losses of the Baltimore and Ohio

Railroad and the United States Steel Corporation (or similar enterprises), from the early 1930's to the present time. (As each year's issue of such a series usually contains comparative figures for several years, in respect to any particular corporation, probably it will be necessary only to consult two or three reports of the series.) Consider your figures in the light of what is said in this chapter on the subject of fixed costs.

PROBLEMS

1. A businessman, addressing a meeting of his staff, said that costs should be kept as low as possible. Do you agree that this is desirable from the business owner's point of view? Why?
2. You overhear a dispute between three students, preparing for an examination. One says a machine represents a fixed cost. Another says it is a variable cost. The third says that it is both fixed and variable. Which is correct, if any? Why?
3. You hear that the Tennessee Valley Authority, a government authority, produces electricity very cheaply. By making inquiries you learn that the authority owns a costly dam which serves other purposes (such as flood control), as well as helps to produce electricity. How do you think that the cost of this dam should be apportioned between electricity and flood control?

CHAPTER 9

THE THEORY OF PRODUCTION FOR PROFIT: THE ENTERPRISE AND THE MARKET

In the preceding chapter, we studied at some length the internal problems of the business enterprise. Costs of the factors of production and prices of the finished products were taken as given. The possibility that the enterpriser could change these was not considered. It is necessary now to examine this point.

PURE COMPETITION

The meaning of pure competition

In both of the cases taken up in Chapter 8, the garden experiment and the trailer factory, it was assumed that the price of the product remained unchanged whatever the output of the enterprise. The same assumption was made regarding the prices of the factors of production, in the gardening instance, and the point was not involved in the other. For a garden these assumptions do not seem unreal. No doubt there are occasional gardens that are so related to special markets that their scale of operations has some effect on prices, but there are probably very few gardens that produce enough of any product to affect its market price, or require so much labor and raw materials that the prices of these factors are influenced.

The term *pure competition* is used with respect to a market in which there is no seller or buyer in such a position that *acting alone* he is able to influence prices. Truck growers who produce vegetables near big cities are examples of producers selling in such a market. None of them is likely to sell

sufficient produce for his activities to have a disturbing influence on the market, and this is true also of the small dealers and householders who are in the market on the demand side.

Together the truck growers influence the market considerably, because it is they who are responsible for the supply. If the price is unduly low, many of them act as our gardener did in Chapter 8, when his product fell in price from ten cents a pound to five, that is, they reduce their output. Like him, they increase their output if the price rises. It is such actions on the part of producers as a whole, along with those of consumers as a whole, that determine the price, as we saw in Chapter 4. But individually they exercise no influence on price.

Output and price under conditions of pure competition

It may be asked, where is the point of output and price stability under conditions of pure competition? As a first approach toward a solution for the trailer industry, we shall assume that no trailer manufacturer produces a sufficiently large number of vehicles to influence the market prices of either the factors of production or the finished goods. We shall assume further that there are no impediments to the movement of enterprisers into or out of the industry.¹ Lastly, we shall assume that every factory operates under identical cost conditions. Figure 14 illustrates the situation, using the cost data of our sample plant, as given in the preceding chapter.²

Under these conditions, price and output will be those that correspond to *lowest average cost*. Trailers will sell for

¹ A situation in which enterprisers can move freely into and out of an industry, when the factors of production can move freely, and also when the finished goods can go from one part of the market to another without hindrance, is called by some *perfect competition*. Other writers employ this term in the same manner as *pure competition* is used in this text.

² See Table 12, page 99. The scale employed in Figure 14 differs from that in Figure 12.

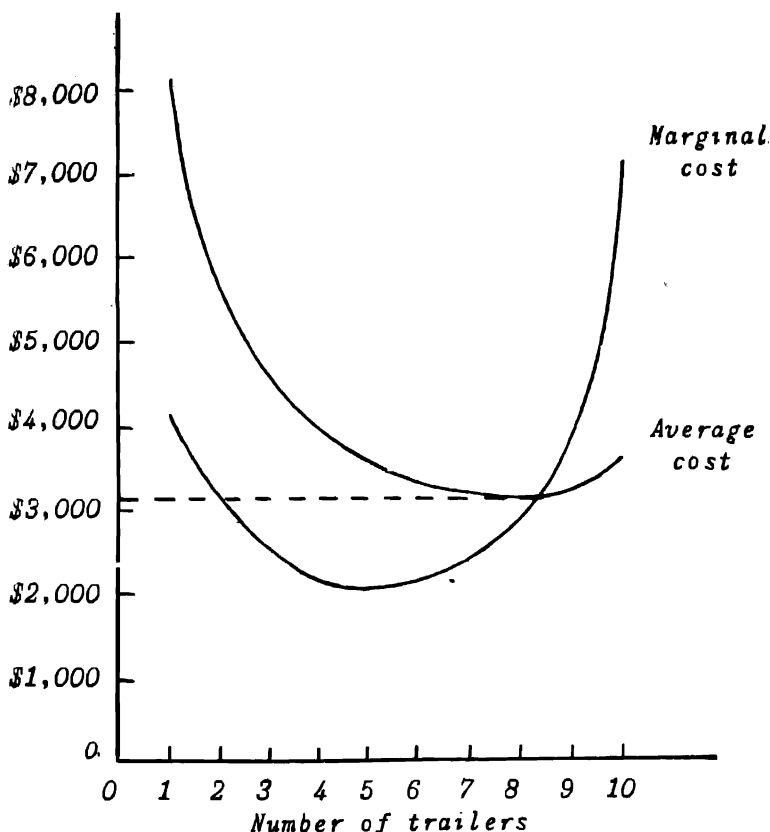


FIGURE 14. COST CURVES, PURE COMPETITION

a little above three thousand dollars (approximately \$3,140)³ and each plant will produce the equivalent of about eight and one-third trailers per month.

³ The discrepancy between the sum of \$3,140, given as the lowest cost in Figure 14, and that of \$3,162, shown in Table 12 of Chapter 8, is explained by the fact that the \$3,162 refers to the eighth trailer, while the lowest point of the cost curve lies between the eighth and ninth trailers. It is not unreal to suppose that a fractional part of a trailer is produced. A trailer on which there has been expended one-third of the labor and materials required in the finished product can be regarded as one-third of a trailer from the standpoint of cost.

Price has been taken as a given quantity, because the output of the individual manufacturer is too small to affect the market. Temporarily, the output can fall below eight and one-third trailers, because at any point between approximately two trailers per month and eight and one-third trailers, the marginal cost is below the selling price. But fixed costs have to be remembered. These are included in the average cost and at any output less than about eight and one-third trailers the selling price does not cover the average cost. At any higher output, marginal cost is in excess of the price of trailers, as is the average cost. This, then, is the only output at which costs are covered.

If the market cost of trailers should rise, because of an increase in demand, the selling price will exceed the cost, and trailer manufacturers will make profits. Here it is necessary to explain what is meant by costs and profits. In ordinary usage, the word "costs" refers to payments that the enterpriser makes to outsiders for labor and other factors of production that he obtains, while "profits" means the income of the enterpriser himself. But economists regard as costs not only sums paid to outsiders but also remuneration that the enterpriser himself receives for productive factors that he furnishes to the business. Profits, as defined by economists, represent *income that goes to the enterpriser in excess of what is necessary to remunerate any factors of production that he contributes to the business.*⁴

It follows that an industry which is making profits in this sense will be attractive to enterprisers who are elsewhere. They will endeavor to enter this favored industry and will offer inducements to owners of other productive factors to

⁴ It is assumed here that costs include not only remuneration for labor, capital and land supplied by the enterpriser, but also any remuneration that has to be paid to ensure that the productive elements of enterprise itself are forthcoming, such as forecasting and risk-taking. This subject is studied in Chapter 16.

serve them in it. On the other hand, if profits as defined in this way are negative, the industry will be unattractive. Enterprisers who are in the industry will lower the prices they offer to other factors of production for their services, and the productive factors, as well as certain of the enterprisers themselves, will tend to move away.

In the case which we are considering, a rise in the profits of trailer manufacturers will cause new plants to be constructed. Immediately the output of existing plants will be expanded. At a price of \$4,000 per trailer, nine trailers per month will be produced by our sample plant. The average cost of nine trailers is \$3,244⁵ and therefore a substantial profit will be made by the enterprise. But this profit will stimulate enterprisers to construct new plants, because we have assumed mobility of enterprise and the other productive factors, and new plants can produce trailers at the same lowest-average-cost figure as is shown by the existing plants—\$3,140—which is lower than the \$3,244 that is required to meet the costs of satisfying the expanded demand from the existing plants.

On the other hand, if the price of trailers falls because of a diminution in demand, some of the existing plants will be closed down. Temporarily, production will be reduced in the existing plants. If the price of trailers falls to \$2,500, for instance, only seven trailers will be produced per month in our sample plant. But at this output, although marginal cost is covered by the selling price, average cost is not covered. There is therefore no inducement to replace the plants as they wear out and enterprisers will endeavor to change to other products.

In practice the existence of immobilities must be recognized. The temporary situations of the preceding paragraphs, in which the plant output may rise or fall, may last for

⁵ See Table 12, page 99.

many years, because specialized productive factors are difficult to transfer from one industry to another. Then also the assumption that all plants produce under similar cost conditions must be abandoned. Specially well-managed or favorably-located enterprises may make profits at a selling price which results in losses to others. In consequence, some enterprisers may be entering the industry because they think it has favorable opportunities for their activities, at the same time that others are moving out. Perhaps it may be that some new development has benefited one set of producers, while it has injured others. Thus, in the latter half of the nineteenth century, following the opening of the transcontinental railroads, wheat growing expanded very rapidly in the prairie states at a time when eastern farmers were reducing their wheat acreage. In the twentieth century, the textile industry of the South has been expanding at a time when that of New England has contracted.

MONOPOLY AND IMPERFECT COMPETITION

Now let us investigate the position of the producer who is so situated that his output exercises some influence on the market price of the product. We may imagine that our trailer manufacturer, who in the preceding section and in Chapter 8 was assumed to sell at the same price regardless of his output, now operates under different conditions. His trailer has special features, we shall suppose, so that there are no others exactly like it. Some buyers attach so much importance to these features that they will buy his trailer at a much higher price than other manufacturers ask for their vehicles. Other buyers, although willing to pay more, will not pay as much more as the first group. Others again do not care much about the special features, either way, and will buy this trailer only at a price which compares with the prices asked by salesmen of competing firms. Finally, there

are those buyers who definitely prefer other makes of trailers, but are willing to buy this one if the price is sufficiently low. We shall suppose that costs are as before and that sales per month and total sales revenue are as in Table 13.

TABLE 13. MONOPOLY REVENUE

Number of trailers sold per month	Price which must be quoted to sell this	Total revenue per month	Marginal revenue
1	\$6,000	\$6,000 ($1 \times \$6,000$)	\$6,000 ($\$6,000 - \0)
2	5,600	11,200 ($2 \times \$5,600$)	5,200 ($\$11,200 - \$6,000$)
3	5,200	15,600 ($3 \times \$5,200$)	4,400 ($\$15,600 - \$11,200$)
4	4,800	19,200 <i>etc.</i>	3,600 <i>etc.</i>
5	4,400	22,000	2,800
6	4,000	24,000	2,000
7	3,600	25,200	1,200
8	3,200	25,600	400
9	2,800	25,200	— 400
10	2,400	24,000	— 1,200

If he is aware of the facts, our manufacturer can be expected to calculate as in Table 14.

Under these conditions five trailers per month will be produced. The fifth trailer raises profits from \$3,400 to \$4,200 per month, as is shown in the sixth column of the table. In other words, it adds \$800 to profits, as indicated in the final column. The sixth trailer, on the other hand, will reduce profits by \$200 (seventh column), lowering them from \$4,200 to \$4,000 (sixth column). Figure 15 shows this in graphical form. In the figure, the marginal cost curve is shown as crossing the curve of marginal revenue at an output of a little less than six trailers. Only five are produced, according to the table, because the sixth does not pay and in the

TABLE 14. POINT OF MAXIMUM PROFIT, MONOPOLY

Trailers produced per month	Total cost ⁶	Marginal cost ⁶	Total revenue ⁷	Marginal revenue ⁷	Total revenue less total cost (profit) ⁸	Marginal revenues less mar- ginal cost ⁹
	\$	\$	\$	\$	\$	\$
0	4,000	....	....	....	- 4,000	....
1	8,100	4,100	6,000	6,000	- 2,100	1,900
2	11,200	3,100	11,200	5,200	0	2,100
3	13,700	2,500	15,600	4,400	1,900	1,900
4	15,800	2,100	19,200	3,600	3,400	1,500
5	17,800	2,000	22,000	2,800	4,200	800
6	20,000	2,200	24,000	2,000	4,000	- 200
7	22,400	2,400	25,200	1,200	2,800	- 1,200
8	25,300	2,900	25,600	400	300	- 2,500
9	29,200	3,900	25,200	- 400	- 4,000	- 4,300
10	36,100	7,200	24,000	- 1,200	- 12,400	- 8,400

⁶ Total and marginal costs are from Table 12, page 99.

⁷ Total and marginal revenues from Table 13.

⁸ Calculated from the corresponding columns in this table. Thus, with no output the amount is \$0 - \$4,000 = -\$4,000. For the first trailer it is \$6,000 - \$8,100 = -\$2,100, etc.

⁹ Calculated from the columns in this table. For the first trailer it is \$6,000 - \$4,100 = \$1,900, and for the second, \$5,200 - \$3,100 = \$2,100.

The last two columns of the table can be reconciled by accumulating the figures for marginal revenue, less marginal cost, and deducting the fixed cost of \$4,000. Thus, for one trailer, \$0 + \$1,900 - \$4,000 = -\$2,100. For two trailers, \$1,900 + \$2,100 - \$4,000 = \$0. For three trailers, \$1,900 + \$2,100 + \$1,900 - \$4,000 = \$1,900, etc.

table it is not assumed that trailers are produced in fractional amounts. In practice, production takes place in fractional amounts, there being usually a considerable amount of what cost accountants call "work in process" at the end of any production period.

The figures reveal a somewhat surprising situation. The sixth, seventh and eighth trailers all have marginal costs that are less than the prices at which they could be sold. The sixth trailer adds \$2,200 to cost and a buyer is available who is willing to pay \$4,000; the seventh adds \$2,400 to cost and a

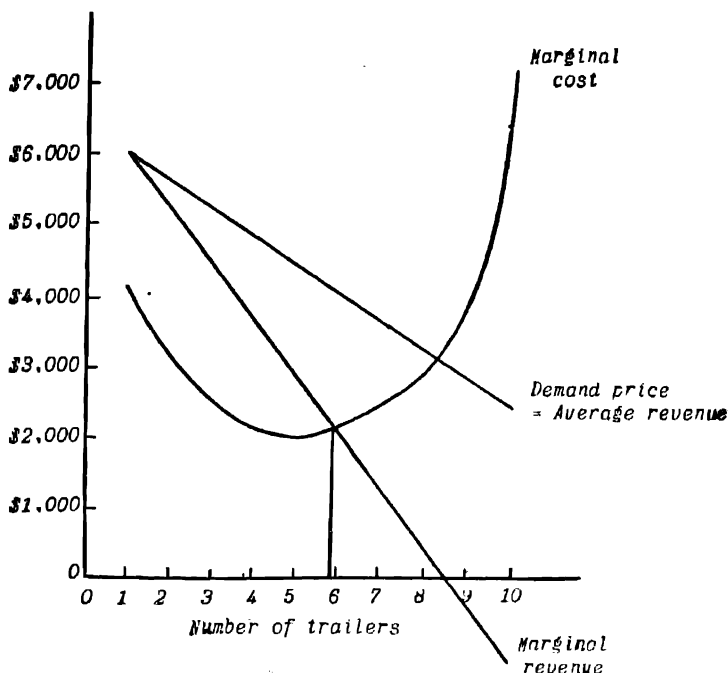


FIGURE 15. COST AND REVENUE CURVES, MONOPOLY

buyer is ready to pay \$3,600, and the eighth adds \$2,900 to cost and a prospective purchaser is in the market at a price of \$3,200. It may be asked why the manufacturer does not produce these trailers. The answer is that he would do so, *were it not for the effect of their sale on the revenue from the trailers that he is able to sell at a higher price.* By being content to sell only five trailers, he is able to secure a price of \$4,400 for each of them. If he offers six vehicles, he will have to lower the price of all six to the \$4,000 which represents all that the sixth buyer is willing to give for a trailer. To sell seven, he must accept \$3,600, not for the seventh alone, but for all the trailers which he produces. In such a

situation, the enterpriser loses more by the fact that he has to lower the prices he charges to those who are agreeable to pay high prices than he gains from the additional sales.

This brings out the main feature of monopoly pricing. Generally speaking, *a producer who is able to restrict the supply of his product, so as to secure a higher price, can improve his profits by doing so.*¹⁰ This power is denied to a producer who operates under conditions of pure competition because, although such a producer may restrict his supply if he should choose to do so, he cannot raise the price by this method because his supply is too small to affect the market. By small in this case we mean relative to the demand. The trailer manufacturer, in the situation described in the present chapter, produces only a small number of trailers, but the demand appears to be small also, so that the output of his plant has a considerable effect on selling price.

In economics the word *monopoly* is used in reference to a market in which there is a single seller or buyer,¹¹ the seller or buyer concerned being spoken of as a monopolist. When a seller or buyer, though not alone in the market, is yet important enough in the volume of his dealings to exercise an influence in price, there is said to be *imperfect or monopolist competition*. These names are intended to convey the meaning that such a situation is intermediate between that of pure competition and monopoly. But the word monopoly is used rather loosely and many people employ it to refer to what here is called imperfect competition as well as to monopoly proper.

The distinction between monopoly and imperfect competition is not always clear. Baker Smith may have a monop-

¹⁰ There are exceptions, some of them important. See Chapter 11, pages 141-142.

¹¹ A buyer's monopoly and a seller's monopoly may be distinguished, according to whether we have a single buyer or a single seller. Some writers refer to a buyer's monopoly as *monopsony*, but the name has not been adopted generally.

oly of Smith's Goldwheat Bread and by advertising he may convince certain buyers that his brand is superior to all others. But certainly he has not a monopoly of bread and if his price is raised much above the sum charged by other bakeries his sales are likely to fall off. This is an important point in connection with advertising. Much advertising is conducted for the purpose of persuading the buying public that the products advertised are better than their competitors so that in the market they become, in a sense, a different article, like the trailers considered earlier in the chapter.

Under conditions of imperfect competition, it is very difficult for an enterpriser to prepare satisfactory cost and price schedules to guide him in making his decisions. The effect on sales of a price reduction in Goldwheat Bread will be very different if other producers follow the same course from what it will be if other bakers keep the prices of their brands unchanged. If the other bakers follow Smith in his price reduction, probably all that Smith's sales will gain is their share of the response shown by the whole bread market to a lower price. But if other brands of bread remain at the old price, sales of Goldwheat probably will expand much more, at the expense of those of the other varieties. Similarly with a price increase. If Smith acts alone in raising prices, his sales may fall off badly. If all the sellers of bread raise their prices, each may expect to retain his share of the market. Such a situation often leads to collusion among the sellers. If, instead of pursuing independent policies, they act *together*, they put themselves in the position of a monopolist, or single seller, able to fix the price that gives them as a group the highest profit.

Differential or discriminating monopoly

Hitherto we have assumed that there is only one price in the market. The trailer manufacturer found his marginal

revenue falling more quickly than his average revenue for this reason. In some instances, however, this condition does not apply. Perhaps a surgeon may be able to get every patient to pay all that he can afford. A popular author may not be able to do this with his public, but at least he can segregate his readers into groups, selling first editions to a small group at a higher price than he is able to obtain from the others. An electricity company commonly arranges matters so that it has one schedule for domestic consumers, another for industrial users, and perhaps a third for large government bodies. Such a situation is known as *differential or discriminating monopoly*.

How can a differential monopolist be expected to behave? He will *sell to each customer at the customer's maximum buying price, providing this price covers marginal cost*. The figures of the trailer example given earlier in this chapter will illustrate the principle.

TABLE 15. REVENUE FROM DISCRIMINATING MONOPOLY

Number of trailers sold in each month	Customer's buying price ¹²	Sales revenue
1	6,000	6,000
2	5,600	11,600 (6,000 + 5,600)
3	5,200	16,800 (11,600 + 5,200)
4	4,800	21,600 <i>etc.</i>
5	4,400	26,000 <i>etc.</i>
6	4,000	30,000
7	3,600	33,600
8	3,200	36,800
9	2,800	39,600
10	2,400	42,000

¹² From Table 13, page 121.

TABLE 16. POINT OF MAXIMUM PROFIT, DISCRIMINATING MONOPOLY

Trailers produced per month	Total cost ¹³	Marginal cost ¹³	Total revenue ¹⁴	Marginal revenue (demand price) ¹⁴	Marginal revenue, less mar- ginal cost ¹⁵
	\$	\$	\$	\$	\$
0	4,000	....	....	....	....
1	8,100	4,100	6,000	6,000	1,900
2	11,200	3,100	11,600	5,600	2,500
3	13,700	2,500	16,800	5,200	2,700
4	15,800	2,100	21,600	4,800	2,700
5	17,800	2,000	26,000	4,400	2,400
6	20,000	2,200	30,000	4,000	1,800
7	22,400	2,400	33,600	3,600	1,200
8	25,300	2,900	36,800	3,200	300
9	29,200	3,900	39,600	2,800	— 1,100
10	36,400	7,200	42,000	2,400	— 4,800

¹³ From Tables 12 and 14.

¹⁴ From table 15. Total revenue is the final column of that table. Marginal revenue coincides with customer's buying price (middle column) or demand price under these conditions.

¹⁵ Calculated from the columns in this table. For the first trailer it is \$6,000 — \$4,100 = \$1,900, and for the second \$5,600 — \$3,100 = \$2,500.

Eight trailers are produced in this case, if our enterpriser knows what he is about. So the result is reached that, if the trailer manufacturer is able to prevent his extra sales from spoiling the price of the trailers that he can sell to those customers who are willing to pay more, he will produce and sell the additional three trailers about which we were puzzled earlier (see pages 122-123). In other words, the seller who can differentiate his price, so as to get from each customer the maximum that the customer is prepared to pay, will carry production *to the point where marginal cost equals demand price*. It follows that he will sell his product to everyone who is prepared to pay the cost of producing the

unit which he buys. The monopolist who can discriminate in his prices, therefore, will produce the same amount as the enterpriser who operates under conditions of pure competition, and the marginal buyer, who pays the lowest price to the monopolist, will get his commodity at the same price as he would pay under pure competition. The point where marginal cost equals demand price in Figure 15 is the same as that where marginal cost equals average cost in Figure 14.

The monopolist in the long period

Often, although not always, monopoly power is temporary. It rests on such factors as a public utility franchise, which can be taken away by the authority that granted it if it is thought to be abused or which subjects the enterprise that owns it to regulation by a government body, on a patent or copyright which will lapse with the passage of time, or on good-will which has been built up by successful advertising and which will disappear if the customers are dissatisfied. A common cause of such power is the circumstance that the economies of large-scale production are so great that plants or firms are big and entry by new enterprisers into the field is difficult. But in this case also, time may allow a firm which in its early years was insignificant to grow to a large size, or one which has become important in another industry to enter the monopolized field. A firm which is able to influence price, therefore, frequently finds it well to abstain from using its power to secure the maximum present advantage, in order that its future may be protected.

SUMMARY

Pure competition is said to exist in a market when no buyer or seller, acting alone, is in a position to influence the price. The term *monopoly* is used where there is only one

buyer or one seller in the market. The intermediate situation is referred to as *imperfect competition*.

Although there are exceptions, generally a producer who is in a position to raise the price by restricting his output finds that his profits are increased when this course is followed. But if a monopolist is able to discriminate among his customers, so as to get from each buyer the maximum that the latter is prepared to pay for the commodity, he maximizes his profit by selling to everyone who is willing to pay the cost of producing the unit that he buys.

EXERCISE

Call at the office of the local electricity company and ask if you may see a copy of its rate schedule. Examine this. Do you see any evidence of discrimination?

PROBLEMS

1. Place each of the following in one of the three groups. (a) perfect competition, (b) monopoly, either buyer's or seller's, and (c) imperfect competition. Give your reason in each case.

The United States government buying the services of fit young men between eighteen and thirty-eight years of age during the Second World War.

Services of girl students in taking care of young children.

Services of policemen, who are required to be residents of the area at the time they make application for a position.

Cigarettes.

Chewing gum.

This textbook.

2. "The price of (*i.e.*, charged by) a monopoly is upon every occasion the highest that can be got." Is this correct? Why?

OTHER MOTIVES AFFECTING PRODUCTION

Frequently a comparison is made between private enterprise, on the one hand, and co-operation or government ownership on the other. It is said that private enterprise is dominated by the profit incentive and that the motive in the other case is service. It must be realized that the two motives are the same to some extent, since private enterprisers are able to make profits because they convince their customers that a worth-while service is being rendered. Moreover, there are other motives than profit in production. In view of the different light in which co-operatives and government enterprises are viewed, it is desirable to examine these other motives and their relationship to the productive process.

NOTE ON INCENTIVES IN PRIVATE ENTERPRISE

It should be said that private enterprise is not carried on entirely for profit, if profit is taken to mean the financial results shown by business accounts. Members of the board of directors of such an establishment as a bank, telephone company or other large enterprise are subject to pressures and pulls in various directions. The stockholders want dividends, it is true, and the directors may themselves be large stockholders. But the salaried executives have the ear of board members, so that at times their interest is served even if it does not allow the stockholders their greatest profit. The general body of employees forms an important group and through its representatives in labor negotiations and in other ways it is able to wield a certain influence. The same is true

of the customers of the enterprise. Then the business and personal associates of the directors can reach the board. So can newspaper editors through the columns of their publications and politicians by speeches or comments to publicity men. The private interests of the directors should not be forgotten. In addition to their shareholdings, commonly some or all of them receive salaries and fees. They may be able to manipulate the price of the stock or take advantage of their special position in forecasting the future of the business to make market profits from stock deals. This is the profit motive but here it is a personal and often hidden profit that is sought, not a profit which is shown in the business accounts. The directors want their enterprise to seem a success to the public. To some of them, success is measured by growth in the size and influence of the business, rather than by maximum earnings per share. Probably their own salaries and fees will increase as the business grows, so that they may gain enough in this manner to compensate for a lower per share rate of earnings and dividends. The directors attract more attention as their firm increases in size. If the head of a great corporation speaks on public policy, he receives a hearing that is denied a small businessman. A spectacular gift to a popular charity may have as much appeal to a board member as a dividend increase. Many of the directors are old men with relatives or favorites whom they wish to promote in the business. They have other interests and to some of them attendance at board meetings becomes a matter of routine. Some become unduly conservative. From the viewpoint of one interested in profit, perhaps it is fortunate that the detailed conduct of business enterprises is in the hands of younger men, vigorous executives who look on the success of their departments as the means whereby they may secure promotions and increased salaries.

Motives are mixed in small enterprises also. The grocer

or the lawyer cannot help knowing something of what his friends and neighbors think of his actions and he is likely to allow their opinions to exercise a certain amount of influence in his decisions. There is, as in larger businesses, a pride in achievement. Fine crops and fat cattle, together with a moderate bank balance, may satisfy a man whose heart is in farming more than if these are the opposite way around. But this book is not a treatise on human motivation. Any one who believes that personal gain is unimportant as an incentive might ask himself what he would do if seats in a bus cost five cents on one side of the aisle and fifteen cents on the other, instead of a flat rate of ten cents. Many phenomena in business and elsewhere can be explained on the assumption that the motive of profit has a great influence, but we should be unwise to regard accounting profit as the only important incentive in business management.

MOTIVES IN CO-OPERATIVE AND GOVERNMENT ENTERPRISE

Conditions are no more simple in co-operative and government concerns. Some of the co-operatives appear to be in business at least as much for profit as are many other organizations. Those at the head of agricultural marketing co-operatives frequently claim that the main purpose of their organizations is to save money for the farmers who join them, by marketing their products advantageously. Often the leaders of consumers' co-operative stores state the same objective. These co-operatives have been developed in such a manner that savings are reflected in accounting profits, the profits being passed on to the members in the form of dividends on purchases.

But the managers of co-operatives have not the same inducement to make profits at the expense of customers as exists in private enterprise, because most of the customers are also owners of the business itself. Many leaders of the

co-operative movement have been inspired by a reforming zeal. They have believed that private enterprise and private profit are objectionable, if not immoral, and that co-operation should be world-wide. In many cases, the directors of the co-operatives have had so much sympathy with the labor group that they have been willing to pay wages above the competitive level. Yet among managers of co-operative enterprises there have been those who have looked to their own interests primarily, so that their plans have been directed toward magnifying their own importance, jobs have been given to relatives and bribes accepted.

Sometimes consumers' co-operatives have sold their products at prices above those charged by their privately owned competitors, in order that profits and dividends may be high. In so far as the co-operative trades with its members, this means that members pay additional sums, when they make their purchases, which are returned to them in the periodic dividend disbursements, and can then be used to finance such items as vacation expenditures and the purchase of household equipment. This practice has been popular in Britain in the past and has been regarded as a convenient form of saving among the working classes, who form the bulk of the membership of the consumers' co-operatives. But if the co-operatives which act in this manner trade with non-members the latter are taxed, in effect, for the benefit of the members, and purchases from the co-operatives by non-members are to this extent discouraged. Whatever price policy is followed by co-operative enterprises, non-members usually do not share in dividends and therefore do not participate in any savings which may result from the operation of the business.

With appropriate changes, much of what has been said about the co-operatives applies also to government enterprise. Sometimes those in charge have been ardent social reformers.

Others have been capable businessmen, concerned primarily in making their enterprise show good financial results while affording a satisfactory service to the consuming public. Others again have sought their own advantage. Economic considerations may be compelled to give precedence to political factors, as was the case when the Canadian government constructed an unprofitable railway to the Atlantic provinces in accordance with the terms of the Dominion confederation agreement. With the post office in America the service function has been combined with revenue raising, and in some countries the latter has become predominant.

Decisions which subordinate economic considerations to political or other factors are not to be regarded as objectionable, provided they are made with good judgment and have regard to the interests of all those who are involved. It must be recognized, however, that sometimes government decisions are based less on a sincere interest in the good of the whole than on what is thought to be the good of the party in power. Where democracy is effective, parties cannot stay in power for a long period without convincing the majority of the electors that their interests are being served, but an identification of general interest with party interest is not always obvious in short periods. What purports to be the interest of the entire nation or of the party in power is at best no more than what those in control believe to be in this interest and at worst may be some group or personal scheme that has been foisted on the government. Personal factors have operated here also. Government enterprises have been used to support, through jobs in the public service, the personal camp-followers of influential politicians and in some instances corruption has reached scandalous dimensions.

Often the consuming public is not entirely synonymous with the taxpaying body, so that profits made by the enterprise from one group of people go to benefit another, or

losses incurred in satisfying the wants of a particular class have to be met by another group. A municipally owned amusement park frequented mainly by non-residents and a street-car system patronized chiefly by those who do not own automobiles are examples.

THE INTEREST OF THE CONSUMER

Aside from these factors, the circumstance that an enterprise is controlled or operated by the government or by a consumers' co-operative introduces a new element into managerial decisions. The benefit that the consumer receives in lower prices has to be taken into account, as well as the reduction in the profit of the enterprise which may follow such a move. If the consumer gains more than the enterprise loses, the lower price becomes justified.

The rule that price should equal average cost

Sometimes the rule is laid down that government management or control should endeavor to *equalize sale price with average cost*. The argument behind this will be understood if we refer back to the treatment of monopoly in Chapter 9. There we saw that the monopolist who was unable to discriminate in his prices between one consumer and another maximized his profit at the output where *marginal revenue* equalled *marginal cost*. The monopolist who could charge discriminatory prices, so as to make each customer pay all that the commodity was worth to him, obtained his maximum profit at the output where demand price or *average revenue* equalled *marginal cost*.

The reason for this difference was that the differential or discriminatory monopolist was not obliged to grant to other customers the benefits of a price reduction made to extend sales. In our example, he was not required to reduce the prices charged to the buyers of trailers numbered 1 to 5

when he lowered his price sufficiently to find a buyer for trailer number 6. He was himself able to *balance all the gains and losses of price reduction*. He found the balance where it could be expected, that is, at the point where consumers' wants as expressed in money (demand or average revenue) just equalled production costs as expressed in money. The monopolist in our example used marginal costs in his calculation, not average costs, but it must be remembered that he was concerned primarily with a rather short period. However, costs which are fixed in a short period become variable when a longer time is taken into account, and in the long period our monopolist would expect to recoup all his costs. In the long period, therefore, what requires to be covered by price is *average* cost, which includes costs that are fixed in shorter periods.

Qualifications of the rule

However, the rule that an enterprise should be required to sell its product at a price equalling average cost requires some qualification.

(1) While common sense dictates that an enterprise shall appear beforehand to be worth its cost, in the sense that expected benefits should cover expected costs, there is nothing to prescribe that all the cost must be met by the *consumer of the product*. Governments may consider it justifiable for a number of reasons to sell the product below its cost. Education is an example. There is virtually no opposition to the policy of selling education below what it costs to provide, or even giving it free of charge.

(2) The factor of joint costs, where it is operative, means that the cost of particular units of the product cannot be ascertained in more than a partial way. In an enterprise such as a railroad or an electricity concern, a large proportion of the costs are joint and are apportioned either in an arbi

trary fashion or in response to political or other pressure. For instance, the South African government railroad, although in effect required by law to operate on a rate basis which meets average costs, has charged high rates on the goldfields traffic and low ones on agricultural exports and in the rural areas because of political factors. This aspect is particularly important in view of the significance of government ownership and control in the utilities field.

(3) Even when it is planned that the consumer shall bear all or a certain proportion of the costs, it does not follow that this will occur. Mistakes are frequent, both in government and private enterprise. Events may make it impossible to achieve the anticipated results. Thus, a railroad may be built in an area in process of being settled, with the intention that revenue shall meet all costs. Because population does not fill the area as had been forecast, the enterprise cannot recoup its construction costs, although the railroad operates so long as the costs that are variable in short periods are met from revenues. Raising the rate schedule may be useless because the demand for the railroad's services may prove so elastic that revenues diminish when the rates are increased, although no corresponding reduction in costs is secured. In this case, some or all of the costs of constructing the road must be borne by the government or other enterpriser who constructed it and cannot be passed on to the consumers. The problem of risk receives consideration in Chapter 16, dealing with profits. It is enough to say here that if it is apparent that the sale prices of railroad services are fixed at a level which permits the successful enterprises to meet their costs but offers no additional reward to compensate the risk of failure, private enterprise will be deterred from entering such businesses. Further, even government enterprise cannot escape the risk of failure and, if the consumers of the products of government business are not made to pay anything toward the costs

of failures, these must be met by the general taxpayers. As between the two alternatives, probably most economists would favor charging the consumers of products which involve risk with an allowance proportionate to the risk involved, so as to deter an undue preference on the part of consumers for commodities whose production is risky.

(4) The rule breaks down completely where the consumers are not the owners of the enterprise and have interests which are not considered so important as those of the owners, or where two groups of consumers are involved, one group being owners and the other non-owners of the enterprise. Thus, the municipality of a seaside resort, which owns and operates an amusement park, may base its charges on the principle followed by the private monopolist. It may aim at maximizing its profit and consider the policy justified because the consuming body for the most part is not composed of its own citizens but of outsiders or summer visitors. Again, most American consumers' co-operatives follow the plan of selling goods at the same prices as are charged by their competitors, returning profits to members in the form of patronage dividends. As a result, profits earned by selling to non-members do not go back to the non-member consumers but are reflected in higher dividends paid to members of the co-operative. In some cases abroad, as has been mentioned, prices above the competitive level have been charged by co-operatives, making this aspect even more important.

SUMMARY

Sometimes the profit motive of private enterprise is contrasted with an objective of service in co-operative or government undertakings. The problem of incentive is complex. However, co-operative or government enterprise incorporates a new element into managerial decisions, the benefit to the consumer of the commodity.

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In general terms, it is possible to lay down the rule that government management should endeavor to equalize sale price with average cost. Yet this rule is subject to important limitations. In some instances it is considered undesirable to require all the costs to be met by the consumers of the commodity concerned. Then the existence of joint costs may preclude apportionment except on an arbitrary or pressure basis. Further, mistakes are frequent, so that the planned objective cannot be achieved, while the cost of mistakes have to be met in some manner. Last, the rule breaks down when the consumers are regarded as less important than those who own the enterprise, as is the case, in a government undertaking, when the consumers are foreigners or visitors, or in the case of a co-operative, non-members.

EXERCISE

Ask yourself how far a major decision which you have made recently was governed by the profit motive. Put the same question regarding a decision made by one of your friends, with whose circumstances you feel familiar. For example, ask why you decided to enter college and why your best college friend made the same decision. Attempt to estimate the relative importance of any motives that you are able to identify. Thus, you may apportion your motives as follows, (1) profit motive, in the form of a thought of securing a good position afterward—40% (2) desire to be with friends who are doing the same—40%, (3) desire to please parents—20%.

PROBLEM

The post office is owned by the federal government. Do you approve the rates charged for the carriage of mail? If not, in what respects do you think that they should be changed and why?

CHAPTER 11

PRICE CONTROL

THE RECENT HISTORY OF PRICE REGULATION

Enthusiasts for private enterprise, such as the early followers of Adam Smith, believed that consumers had sufficient knowledge to choose properly from among the commodities offered to them, and that competition among producers would ensure fair prices. They thought, too, that competition among employers would result in satisfactory wages. To some extent, probably to a large extent, the system of private enterprise has operated in this manner.

Yet during the late nineteenth and early twentieth centuries there has been increased regulation of prices, directly, or indirectly through control of the conditions of competition. Following a period in which competition was relied upon to protect the railroad user, the Granger laws¹ of the 1870's established in America the principle of government regulation of railroad rates. The control of the rates charged by other public utility undertakings, by state regulatory bodies, commenced soon afterward. It was recognized that competition was ineffective to protect the consumer because in many districts the railroads and other utilities were monopolies. Acceptance of the idea of regulation extended to manufacturing industry in the twentieth century. Before the First World War the emphasis in government policy was on the preservation of competition; later more attention was paid to control, although the earlier approach was not altogether

¹ So called because of their connection with the Grange, a farmers' movement.

abandoned. Prices were not fixed, but practices which might affect prices to the injury of the consumer were checked.

During the First World War, and still more during the Second World War, price regulation was imposed over industry in a far-reaching way. During the earlier conflict, the chief thought was to protect the consumer against unduly high prices. In the second, while this aspect was not overlooked, the main purpose was the direction of the economy toward winning the war.

THE CONDITIONS OF PRICE CONTROL

Elasticity of demand

In regulation of any kind, methods have to be devised that are appropriate to the end in view. If the intention is to help the farmer by giving him a higher income, the obvious step seems to be to raise the price of his product. But an increase in price yields a higher *total revenue* to the seller only if the elasticity of demand is less than unity, that is, if the higher price does not contract demand so much that the amount spent on the commodity is less rather than more. It is true that *profit* may be increased, even when total revenue is lessened, if a reduction in output lessens total costs more than total revenue. But whether or not this is likely to occur cannot be ascertained without an examination of the cost aspect.

Costs

It may happen that a reduction in selling prices, which at first sight is injurious to the producer, will prove beneficial. If a relatively small fall in the price of the product stimulates a great extension of demand, while this in turn permits the industry to operate on a lower cost basis, profits may increase. Enterprisers are likely to discover such situations for them-

selves, as was the case with the automobile industry during its early years. The price of cars was lowered time after time and such a large demand developed at the lower prices that mass-production methods could be adopted and low manufacturing costs achieved. Occasionally public utilities have required a rate reduction, ordered by a regulatory body, to induce them to explore the possibility of lowering costs by expanding the volume of output.

When prices are determined by a regulatory authority, much depends on the volume of production that is desired. During the two world wars, farmers were allowed to receive prices for their products that were proportionately higher than most other prices, not merely because it was generally conceded that their production costs rose with an expansion of output but because a considerable increase in agricultural production was considered desirable. On the other hand, the rents of city houses were restricted in wartime to levels not greatly in excess of those ruling in peace years. This was not done because it was believed that building costs had remained low. It was well known that they had increased greatly. The government did not want houses to be built. It was felt that the country could manage with the existing supply of houses and that materials and labor should be devoted to war purposes. Until wear and tear began to reduce the existing supply substantially, there was no need to give attention to construction costs. Only the costs that were required to maintain in reasonably satisfactory condition the houses that were already built had to be considered, and rents would have to be very low for a long time before they would fail to cover these costs.

Yet if low rents were to be continued indefinitely, in the course of time the supply of rental houses would diminish. This is what happened in Britain after the First World War. Rent control was continued after the war on a low-rent basis.

Virtually no houses had been built during the war, and a serious shortage developed when the army was demobilized. With the prospect of continued control of rents at unattractive levels, private enterprisers were unwilling to construct rental properties. All over the country contractors were building houses for sale, but only the city and town government bodies (which received subsidies for the purpose from the central government in London) built any large number of houses to be rented. Private enterprise avoided the renting industry and the government took its place.² The government built only the smaller type of house, however, and in some areas did not construct enough of these to satisfy the demand, so that many persons who would have preferred to rent houses were forced to become house owners.

It is with such a possibility in view that law and public opinion in America have sanctioned the principle of regulating prices in public utilities on the basis of long-term costs. The Constitution gives a certain protection to property rights in this country, and the courts have restrained regulatory bodies which have sought to fix rates that were unduly low. A "fair return," representing the *interest rate available from other investments of comparable risk*, has been the rule, although there has been some dispute as to how the capital, upon which this percentage is allowed, is to be calculated. After the First World War, utility companies argued that the value of their properties, on which the percentage was to be calculated, should be the current cost of construction, or the *reproduction cost*, which at that time was high because of the rise that had taken place in prices of all kinds during the war. The consumers' representatives and sympathizers, on the other hand, argued that the percentage should be calculated on *actual construction costs*, which usually were

² Of course this was the case only so far as new construction was concerned. Most British houses are built of brick or stone and last for many years, so that many rental properties remained in use.

low since the properties had been built in most cases before the war.

Probably the basis which receives most support at the present time is that of *prudent investment*. On this basis, interest is calculated, not upon all the costs that have been incurred, but only upon those that appear to have been incurred with reasonable prudence, having regard to circumstances. Such a plan, if carried out completely, would make investments in this field similar to government bonds, in that they would yield a safe return which remains unaffected by price changes. The popularity of bonds as investments suggests that there may be no dearth of individuals willing to invest their capital under such circumstances, but the assurance of a return on all investments which bear the test of reasonable prudence, while restraining rash ventures, would have the effect of lessening the incentive to higher standards of efficiency and leaving the burden of promoting efficiency to such factors as the public spirit of the managers and the pressure of public opinion.

Government regulation may alter costs. One of the costs of investment is the compensation demanded by capitalists for the risk of loss. In the absence of control, the capitalists may hope that high profits will emerge and this hope may be sufficient to induce them to supply capital for risky ventures. But such an attraction is removed if a regulatory authority refuses to permit unusual profits. If the authority is trusted by the capitalists, and they believe that its operation affords them a guarantee against the risks of loss, then presumably they will not require to be compensated in a chance of high gains. On the other hand, if the regulatory authority is disliked or distrusted, and the capitalists fear that its operation merely adds to their risks of non-success, they will require to be remunerated for the additional risk of loss, or new capital will not be forthcoming. Probably the

first of these situations existed in some degree in the American public utility industry in the late 1920's, and the second in the middle 1930's.

THE TECHNIQUE OF FIXING THE PRICE

Since demand, supply and price are all interlinked, it follows that prices can be controlled either directly, by *fixing the price itself*, or indirectly, by *regulating demand or supply or both*. Which of these courses is chosen will depend on circumstances.

Controlling supply and demand

Frequently it is impracticable to fix the price itself with any prospect of success, since a multitude of transactions take place between small traders whose actions cannot be supervised, or because the price is determined in a world market which is beyond the reach of the government. In such cases all that can be done is to influence demand or supply. Thus, to raise the prices of wheat and cotton in the 1930's, the federal government paid subsidies to farmers for restricting their output. The farmers were helped in two ways: (1) they received the subsidies, and (2) they benefited from the higher prices which resulted, although here the effect of higher prices on the volume of sales and therefore on total revenue has to be remembered. Again, under a control scheme set up by the government of Brazil, the main producing country, large quantities of coffee were burned in that country in order to restrict the amount exported, and a direct control was put on exports for the purpose of raising the price of coffee in the world market. The same principle was followed by the rubber growers in the British East Indies in the 1920's, the tapping of trees being reduced to raise the price of rubber. Again, in some of the younger countries in the earlier stages of their development, when labor was

expensive and difficult to procure locally, representatives of important industries induced the government to import labor from other countries to increase the supply. An increased supply lowers the price—in this case the wage.

Direct price fixing

The alternative method is to approach the problem directly by fixing the price. If the existing price is considered too low, a higher price is prescribed. If it is believed to be unduly high, a lower one is laid down. Or a *minimum* may be declared, below which prices are not permitted to fall. A *maximum* or *ceiling* may be fixed, above which prices cannot rise.

In each case the problem of adjusting supply and demand to the price has to be faced. If a price is fixed at a level below that at which supply is equal to demand, usually there will be a shortage of the goods in the market. Not every prospective purchaser can be satisfied. This is the situation in which people stand in line to buy at stores and endeavor to obtain favors from their suppliers. Some orderly method is desirable to determine which of the prospective buyers are to be supplied. *Rationing* and the *priority system* were used for this purpose to some extent during the First World War and very extensively during the Second World War. The rationing method is appropriate when the consumers' needs are approximately equal, as with meat and shoes during the Second World War; these goods were distributed on the basis of allowing each person a certain quantity. Priorities are in place when individual requirements have to be studied more carefully by the regulatory authority. The effect of low prices on supply also has to be remembered. Commonly a price is prescribed because the commodity is in short supply, and fixing a low price tends to lessen production further. During the Second World War subsidies were given to producers to counteract this, as with milk.

On the other hand, if regulation raises prices, its effect is that supply tends to be in excess of demand, so that not all the quantity offered can be sold. The government may purchase the excess for storage, if it expects the situation to be temporary. Or the excess may be diverted into some other use, or even be destroyed. Thus, the oversupply of eggs, resulting in some districts from a high guaranteed price at the end of the Second World War, was turned into chicken feed and even into fertilizer. A high wage tends to cause unemployment and this must be taken care of in some manner, as by paying unemployment benefits to the workers who have no jobs.

ENFORCEMENT

The problem of enforcement arises. Those who are willing to buy or sell, but are unable to do so because of the unbalanced supply and demand situation, may form a black market in which unauthorized transactions take place.

If a low price has been fixed so that demand is in excess of supply, some prospective buyers are likely to be agreeable to making purchases privately at higher prices. Unless the supply is very closely supervised, certain producers or dealers dispose of their supply to these customers, at prices that are high partly because of the risks involved. Thus, when meat is rationed, a farmer or a butcher may be able to sell part of his meat in this way, with the result that some customers secure more than their allotted quantity, while others fail to receive their proper allowance.

Similarly, if a high price rules and supply is in excess of demand, some of the producers may endeavor to sell their surplus in an unauthorized market at prices which are lower than the official ones but yet yield them profits which could not be had by conforming with the regulations. Thus the Brazilian government, when it restricted exports of coffee to

raise the price, had a certain amount of difficulty with smuggled exports, whose source was the sales made secretly by coffee growers.

In view of these facts, it follows that price control is most effective when there is a high standard of obedience to law and when supervision is comparatively easy. The Brazilian coffee industry, notwithstanding what has been said here regarding evasion, is well situated in this last respect because the coffee is largely exported and supervision at the ports is relatively simple. When there are opportunities for innumerable small transactions between producers and consumers, the amount of supervision necessary for effective control is likely to be costly, not to say annoying to everyone concerned.

SUMMARY

If price control is to achieve its objectives, the underlying conditions must be studied. For instance, a higher price will not increase the total revenue of the producer, if the elasticity of the demand for his product is greater than unity. Production costs must be borne in mind, since, if a low price is maintained, over a period of time the supply is contracted. Rent control is examined from this point of view, as is the problem presented by rate regulation in public utilities.

The interdependence of demand, supply and price has the effect that price control can be achieved either directly, or indirectly by regulating supply and demand. The appropriate conditions for each of these methods are studied, as is the problem of enforcement.

PROBLEMS

1. Name the effects which you think would follow (a) immediately and (b) in a period of twenty years, from requiring a bus company operating in a university town to (1)

carry students for two cents per passenger, and (2) carry everyone at this rate.

2. During the Second World War everyone was given the same number of shoe tickets, each ticket being good for one pair of shoes. What improvement would you suggest to this plan, in view of what you know of the quality of shoes and the needs of different people? After you have answered this question, ask among your friends and their parents whether anything of the nature you suggest was in fact tried during the war.

3. What do you think would be the effect on the price of agricultural land in this country of continued government assistance to the farmers in substantial amount? This question will be asked you again after you have studied the chapters dealing with interest and rent.

CHAPTER 12

THE DISTRIBUTION OF INCOME AMONG THE FACTORS OF PRODUCTION

The distribution of income may be studied from two points of view. The first, *personal* distribution, deals with how much each person gets and the sources from which he gets it. It is the subject matter of Chapter 25. The second we may call *factor* distribution because it examines the manner in which the prices of the factors of production are determined. These prices are wages, interest, rent and profits and are dealt with in Chapters 13 to 16. In a society such as ours, personal incomes are for the most part composed of factor prices. That is to say, the income of an individual is made up largely of the wages or salaries he receives for the labor he sells, the interest he derives from his capital, the rent he receives from real estate, and the profit on any enterprise he conducts. But factor and personal distribution do not coincide because payments to and from the government are interposed. Taxes are levied on factor incomes and sometimes government subsidies are added to factor incomes. These adjustments nowadays affect very considerably the incomes that are available to individuals for consumption purposes.

THE MARGINAL PRODUCTIVITY THEORY OF DISTRIBUTION

Economists have developed a theory of factor distribution which conforms to their other theories. Wages being regarded as the price of labor, interest as that of capital, and rent as the price of land, it is very natural that these payments should be explained in the same manner as other prices.

Production takes place under the orders of an enterpriser, who furnishes certain elements himself, such as forecasting

and risk-taking, and purchases the services of other factors (labor, capital and land), combining the whole in the production process. He employs the factors in competition with other enterprisers. He hires them because he believes that they will contribute more to his product than they add to his costs.

The productivity of labor

The principle of diminishing returns applies here. If successive units of a factor of production are employed in the productive process, while the quantities of other factors remain fixed, in due course the returns will fall off. Thus if units of labor are added one after another to the fixed factors

TABLE 17. MARGINAL PRODUCT, 1.

CAPITAL AND LAND FIXED, LABOR VARIED. EXAMPLE: A FARMER
HIRING ADDITIONAL LABORERS.

Number of workers employed	Expected return (product) per week \$	Expected return (product) of last man added (marginal product) \$
0	100	...
1	250	150
2	450	200
3	570	120
4	650	80
5	700	50
6	720	20

represented by the land and capital of an industrial plant, although in the early stages the returns afforded by each increment of labor may increase, ultimately a point is reached where an additional unit of labor fails to return its cost and therefore becomes unprofitable. The enterpriser will

employ all the units which yield him a profit but, if he has knowledge of the situation and thinks primarily of his profit, he will not hire the additional units which do not return their costs and therefore reduce profit rather than increase it. Table 17 illustrates this.

If laborers have to be paid forty dollars a week, evidently five workers will be hired. The fifth, who costs forty dollars, returns fifty dollars and therefore his employment will be profitable. But the sixth, who also costs forty dollars although he adds only twenty dollars to the product, will not be employed. If wages rise to sixty dollars a week, while the product remains the same, the fifth laborer will not be profitable and only four will be employed. If wages fall below twenty dollars, the sixth man will be engaged.

Similarly, a higher price for the product, wages remaining the same, will tend to increase the number of men employed. If the product sells at a sufficiently high price for the sixth man's labor to return forty-five dollars, while his wage stands at forty dollars, this man will be hired. On the other hand, a lower price for the product will tend to reduce employment. If the price of the product falls, so that the fifth man's labor returns only thirty-five dollars, his wage remaining at forty dollars, this fifth man will cease to be profitable.

The productivity of capital

The same reasoning can be applied to the other factors of production. Table 18 deals with capital.

If interest on such loans is six per cent, so that it costs sixty dollars in interest for every thousand dollars of borrowed capital, it will pay the farmer to borrow the second thousand dollars but not the third thousand. The second thousand costs sixty dollars and brings in a hundred, hence it will be profitable. The third also costs sixty dollars and only yields fifty, so it will be unprofitable.

TABLE 18. MARGINAL PRODUCT, 2.

LABOR AND LAND FIXED, CAPITAL VARIED. EXAMPLE: A FARMER
BORROWING ADDITIONAL CAPITAL.

	Expected return (product) per year	Expected return (product) from last thousand dollars borrowed (marginal product)
	\$	\$
Farm with no borrowed capital	1,000	
Farm with \$1,000 borrowed	1,200	200
Farm with \$2,000 borrowed	1,300	100
Farm with \$3,000 borrowed	1,350	50

If interest falls below five per cent, so that a thousand dollar loan costs less than fifty dollars, then the third thousand, which returns fifty dollars, will pay. If interest rises to twelve per cent, the second thousand dollars will no longer be profitable, because it will cost \$120 and yet return only a hundred dollars.

If the price of farm produce rises, it may pay the farmer to borrow the third thousand dollars. At six per cent interest, it costs sixty dollars and will become profitable as soon as the price of the product has risen sufficiently for its yield to be greater than this amount. Conversely, if farm produce falls in price, borrowing will be discouraged. If prices fall so far that the second thousand dollars returns less to the farmer than the sixty dollars it costs in interest, this thousand will not be borrowed.

The productivity of land

Table 19 gives similar data concerning the productivity of land.

TABLE 19. MARGINAL PRODUCT, 3.

CAPITAL AND LABOR FIXED, LAND VARIED. EXAMPLE: A FARMER
RENTING ADDITIONAL LAND FROM NEIGHBORS, IN FORTY-ACRE
UNITS.

	Expected return (product) per year	Expected return (product) from last unit rented (marginal product)
	\$	\$
Farm with no additional land	1,000	...
Farm with 40 acres rented	1,400	400
Farm with 80 acres rented	1,500	100

If five dollars an acre have to be paid for any additional land that is rented and the land must be rented in forty-acre units, then one unit of land will pay but not two. One unit costs two hundred dollars and returns four hundred but the second unit, also costing two hundred, will bring in only a hundred dollars. Rent will have to rise to above ten dollars an acre before it ceases to pay to rent the first forty acres, since it adds four hundred dollars to the farmer's income. It will have to fall below \$2.50 an acre to make a second unit profitable since this second unit yields only a hundred dollars, or \$2.50 per acre.

Similarly with the price of the produce. As forty acres of land costs two hundred dollars, if the price of farm produce falls to less than half the amount we have assumed, so that the first forty-acre unit of land rented returns less than two hundred dollars, then the first rented unit will not pay. If the produce rises to more than double the original price, so that the second rented unit will return above two hundred dollars, this second unit will become profitable.

General statement regarding employment of the factors

Reducing these results to a general statement, we may say that the additional produce that is expected to accrue from the employment of labor, capital and land forms the basis of the demands of enterprisers for the services of these factors of production. *The employment of each factor is carried to the point beyond which its cost is not expected to be covered by the addition which it makes to the produce.* All units which are expected to add to profits are employed, although not those which are expected to add nothing to profits but instead to reduce them. The point at which employment ceases, in any particular case, depends on the *value of the product* and the *cost of the factor*. The value of the product is itself a compound of *physical product* and *price*. Either an increase in physical product, which generally is spoken of as an increase in productivity or an increase in physical productivity, or a higher price for the product, will raise the value of the output and therefore increase the demand for the productive factors. On the other hand, a lower physical product, or a smaller price for the product, will lessen the demand for the factors of production. Higher factor prices (that is, higher wages, higher interest or higher rent) will diminish the employment of the factor of production whose price has risen. Lower factor prices (lower wages, interest or rent) will cause the employment of the factor concerned to expand.¹

Granted that a factor of production is mobile and can be shifted readily from one use to another, every unit will cost the same wherever it is employed and it will everywhere return a product sufficient to cover its cost. It follows that the marginal productivity of any factor will tend to be the

¹ As often is the case in economics, these statements assume that other conditions remain the same. The volume of the national income has a considerable effect on the employment of the productive factors but this subject is dealt with in the note following Chapter 13 and in Chapter 21. *

same in all its uses. In other words, labor will command the same wage in all employments and in each of them it will yield a product sufficient to cover the wage, and the same is true of the other productive factors.

Inter-relation of the factors

The factors of production can be substituted for each other in the productive process to some extent. If land is dear, more labor and capital will be employed on it (that is to say, farming will become more *intensive*), so that the product is obtained by using less land per unit of product and more labor and capital. If labor is costly, there will be an increased use of capital in the form of machinery, and labor will be spread over a larger area of land (that is, farming will become more *extensive*). Capital and land therefore are substituted for the expensive labor in securing the product. If interest is high, less equipment and more land and labor will be used. In other words, land and labor are substituted for expensive capital in obtaining the product. A faster laundry truck, a delivery man who works more speedily, or a laundry site that is less remote, all give the same result as a washing machine that is quicker in operation, so far as the consumer of laundry service is concerned. And not only is this principle applicable to the factors, land, labor and capital, it applies also to the various subdivisions of these factors. One variety of natural resources may be substituted for another, one type of labor for another, one piece of capital equipment for a different one. Even enterprise is included, as is shown later.

This tendency for the factors of production to be substituted for each other, sometimes called the *principle of substitution*, influences the demands of enterprisers for the several factors. If an enterpriser is able to secure an additional product either by installing another machine or by hiring another man, he will be unwilling to pay the man more than

the cost of the machine. The same is true of other factor substitutions. Substitution tends to keep the compensation of the various factors of production at the same level. The sum that a worker receives in wages tends to correspond not only to what his labor adds to the product but to what is added to the product by a machine or a piece of land which costs the same amount as his wage. So the general theory is formulated that *all the factors of production tend to be remunerated on the basis of their marginal productivity.*

ENTERPRISE AND MARGINAL PRODUCTIVITY

Enterprise has its place as a productive factor in this theory. The enterpriser contributes essential elements to the productive process in the form of his capacity to forecast and make plans, his management and his willingness to assume risks. These elements are just as necessary in the productive process as are the other factors of production. Moreover, enterprise is not like a chemical compound, composed of its several elements in definite proportions. It is more like a physical mixture, whose ingredients vary in number and proportions. One enterpriser may be excellent in estimating the future in his particular field but poor as a manager, while another is an able manager but an unimaginative forecaster.

In the marginal productivity theory, we observed that competition distributes each of the productive factors over the various employments in such a manner that its marginal productivity is the same in all directions. This is true of the productive elements of enterprise. Their marginal units tend to yield the same return in all uses.

The remuneration of the marginal units of each factor tends to be the same; for example a worker tends to receive in wages what a machine costing as much would produce. We can conclude that, just as the other factors can be sub-

stituted for each other at the margin, so enterprise in some of its phases can be substituted for other factors at the margin. A farmer with superior skill in forecasting the weather, or greater ability in management, may secure the same crop with less labor or equipment than his neighbor who is a less efficient enterpriser. This farmer tends to receive in profits an amount equivalent to what is produced by the neighbor's machine or hired man.

But aside from the elements essential to the productive process that are contributed by the enterpriser, which have to be remunerated in the same manner as other factors of production, the enterpriser is in the position of being a residual claimant on the income of the enterprise. The fact that he has organized the enterprise and given the owners of labor, capital and land prior charges on the revenues of the business has the result that if things go badly it is he (the enterpriser) who must take a loss. If, on the other hand, they go well, the gain is his also.

QUALIFICATIONS OF THE MARGINAL PRODUCTIVITY THEORY

Addition or withdrawal of the productive factors difficult or impossible in the short run

The marginal productivity theory of distribution has to be regarded as an explanation of long-run tendencies in distribution rather than as an elucidation of the manner in which the prices of the factors of production are determined at any particular time.

First there is the obvious difficulty of ascertaining in more than a general way the amount that any particular productive unit adds to the product of the enterprise in which it is engaged. What was said of the practical side on pages 111-112 applies here also.

Then the theory turns on the assumption that it is pos-

sible to add or withdraw small units of the productive factors. Often this is impossible in any short period. The owner of a coal mine cannot transfer his investment to another industry in a short period by any other method than selling his interest to someone else, in other words by substituting for himself as a mine owner another individual who is agreeable to the change. Further, he is not alone in being bound to the industry. Many individuals and groups have attached their fortunes to the coal-mining industry. The mine owner has invested his money in underground tunnels, winding gear and tipples. The railroad company has built a siding to the mine. People have constructed houses in the mining town. Enterprisers have erected stores and other buildings. Public authorities have furnished roads and bridges. The miners have specialized their skill in the industry and made their friends in the district. All these have a stake in the results of the mining operations. Very few of them can withdraw immediately to enter other fields. Some of the investments, such as siding roadbeds, cannot be withdrawn at all. In the short run, therefore, the income from the sale of the coal has to be parceled out among these various claimants on the basis of bargains conducted under conditions in which the variables that can be withdrawn from the industry represent only a relatively small part of the total cost of coal mining.

In these circumstances, we can lay down only the general rule that *every sharer in the enterprise must cover his variable costs*, with the understanding that these variable costs include not merely sums laid out for the purpose of the industry in which the factor is employed, but also the expected earnings in the most attractive alternative opening available, and take into account the psychological costs of making a change (such as broken friendships).

Even if every participant in the coal-mining industry receives a remuneration which covers his variable costs, as thus

interpreted, coal might still be very cheap, because the variable costs in the short run usually are small. Probably the price of coal is ordinarily higher than the minimum which would cover the variable costs of the owners of the factors of production that are engaged in the industry. What happens to the difference between the total revenue of the mines and this minimum of variable costs? Its disposal is governed by other factors than marginal productivity as generally understood and is described in some detail later.

Strikes and lockouts

If the workers go on strike, they *destroy the whole product*, in effect, because production cannot take place in the absence of labor. A threat of such action is an effective bargaining weapon. The same is true of the employer's lockout. It is true, also, if a railroad company threatens to close its siding, so that no coal can be shipped from the mine, or if the local public utility company refuses to serve it, so that its operation is made impossible. Any of these actions can stop production altogether, and, in the absence of government regulations or some rule of custom that precludes such action, there may be bargaining along these lines. It is in the longer periods or greater ranges of production, when more of the agents of production become variable and may be shifted out of the industry or into it, that marginal productivity as it is ordinarily understood is influential in the determination of factor prices.

LAW AND PUBLIC OPINION

Law and public opinion play a large part in factor-pricing. The law may specify that wages may not fall below a stated sum, or that the rent of a particular house shall not be above a certain amount. In Chapter 11, where this subject was discussed, it was reasoned that, if the sums so fixed do not

allow enterprisers to recoup their variable costs, then workers will be unemployed and houses will stand empty. But here again variable costs are only a small part of the whole, so that wages and rents that are feasible in the short run may prove impracticable in a longer period under stable underlying conditions. The long-run effect of a high minimum wage in a particular industry would be to enforce such a change in conditions. The industry concerned would be required to adjust itself to the high wage, probably by producing on a diminished scale, for a smaller and higher-priced market.

Government action may operate indirectly. Thus, the pursuit of a monetary policy, which has the effect of lowering interest rates, reduces the share of the product which goes to the capital owner. New investors will feel the change first but ultimately the effect will spread over the capital market generally. The effect on the incentive to save must be borne in mind, but if the policy leads to fuller employment in the economy as a whole there may be more saving on this account. All classes may gain from the higher national income which results. Taxes and subsidies affecting the enterprise have to be considered also, because they too influence the size of the product which has to be shared. All these may be incorporated in the marginal productivity explanation of factor prices, because they influence the product or revenue of the enterprise concerned, but this alters the meaning of marginal productivity from that which is usually understood.

CUSTOM AND CONVENTION

Custom has its place in the determination of factor prices, as in the case of other prices. Prices which are accepted as a matter of course by all concerned are difficult to change. Doctors' fees are an example. Arranged as they are at so much per visit, regardless of the importance or length of the call, but frequently rated on a sliding scale to the patients'

incomes, such fees may remain unchanged for a long time in circumstances which have rendered them obsolete, as in periods of unusual prosperity or depression. The same is true of the interest paid on deposits in savings banks. This interest has fallen in recent years, although not to a degree which is in keeping with supply and demand conditions, with the result that larger sums are offered for deposit than the banks can handle on the basis of the ruling interest rates and they are compelled to limit the sums on which the interest will be paid.

At first sight, it may appear that customary prices of this kind are a negation of the accepted rules of supply and demand. This is not the case. What happens is that they condition the free play of supply and demand. If custom decrees that a newspaper must sell for five cents, then a publication is developed on this basis, with appropriate news service, advertisements and circulation. The same is true of law fees which sometimes are at high levels. The use of the service for which they are paid is restricted to a small and wealthy clientele.

SUMMARY

Distribution may be studied from the personal point of view or from that of the factors of production, the latter forming the subject matter here. The marginal productivity theory of distribution has been popular among economists. It states that each factor of production tends to be remunerated on the basis of what its last or marginal unit adds to the product.

Although this theory is useful, it cannot be accepted without qualification. Addition or withdrawal of factor units may be difficult or impossible in short periods. As a rule, every contributor to production must receive at least his variable costs, including his estimated earnings in other fields. But

commonly in the short run there is a residue of income which can be distributed only through bargaining. Workers can threaten to withdraw their labor and so bring the production process to a standstill, forcing enterprisers to consider the losses that such a step would involve. Enterprisers are able to withdraw their plants in like fashion and possibly owners of other essential elements may do the same. On such bases are bargains reached.

Other factors, like law and public opinion, custom and convention cannot be ignored.

PROBLEMS

1. Take any factor of production you know (such as the labor of a friend who is in employment) and ask yourself what remuneration it would be likely to command if it were withdrawn from its present employment and offered in some other field that is open. Then allow for any other variable costs involved in continuing in its present work (such as registration fees or labor union dues). How does the figure you obtain in this way compare with the return the factor gets in its present use?

2. How much would a typewriter produce if there were no typist? a typist without a typewriter? How do your answers to these questions bear on the marginal productivity explanation of the typewriter-owner's income and that of the typist?

CHAPTER 13

WAGES

LABOR AS A FACTOR OF PRODUCTION

Labor as a factor of production is broader than wage-paid labor, because not only do some workers consume their own product, as was the case with the pioneer farmers of America and is still in some of the more backward farming districts, but a large number of people are enterprisers as well as workers and sell the product of their labor rather than the labor itself. This is the case with farmers, small traders of many kinds and professional men, such as doctors and lawyers.

Cost or disutility of labor

Before examining further the supply of labor, it may be well to consider briefly the position of the worker in relation to the work he does. It has been pointed out that certain forms of labor are themselves enjoyable or productive of satisfaction to the workers concerned. The work of artists, musicians and writers springs to mind in this connection. The urge to express themselves in such work is sufficient to cause large numbers of young men and women to enter these professions, in spite of the poverty which often has to be faced. This enjoyment is involved in many occupations. The farmer frequently gets considerable zest from his work and the same is true of carpenters and others. On page 55 of this book appears a figure adapted from a diagram drawn by an economist many years ago. In this figure the first units of work performed are represented as causing disutility or dissatisfaction to the worker. As he becomes warmed to his

work, it is imagined that he likes it and obtains satisfaction from it. In due course, however, he becomes tired and work gets irksome again. No doubt there is something in this idea. Certainly the income from the sale of their labor or its product is only one reason why people exert themselves. Much effort is expended by men and women in their spare time on games. A mechanic takes long walks and a mail carrier works with tools in his garage; an artist fishes, while the owner of a fishing company paints for a hobby. The fact that one man enjoys sketching and another finds pleasure in being with animals may be the decisive factor in the choice of occupations made by the two, but sometimes feelings of this kind have to be satisfied through leisure activities. So far as choice is rational, men select their occupations according to their personal likings regarding work, locality and associations, as well as on the basis of the income they expect to receive from the sale of their labor. At the time decisions are reached, the over-all advantages of the occupations selected must appear greater than those attending others that are considered. But once the major choices of early life have been made, the power to undo them is usually small.

Other general factors relating to the labor supply

Although unspecialized labor can be marketed where no skill is required or where the employer is prepared to furnish the necessary training, usually what the mature worker must supply is not mere energy and dexterity but these together with skill in one form or another. He has to be trained. Government and private schools provide training, though much of this is unspecialized and aimed rather at self-realization than at productive efficiency—at making good citizens rather than at producing competent workers. Technical and professional schools undertake specialized job-training. Young men and women graduate from these institutions

labeled as competent in their chosen fields. Possession of the appropriate degree or diploma may be a requisite for entering an occupation. In some cases not only is skill required but also a set of tools, as in the case of carpenters and mechanics. Since training and tools are expensive and the cost has to be incurred before any product results from the expenditure, a worker who is thus equipped is in a sense a capitalist also, obviously so in the case of the tools.

In some instances the labor of more than one person is what is dealt in on the market. Occasionally advertisements appear for a farm man with a wife who is able to milk cows, or for a man and wife to act as caretakers of an apartment building. An unmarried doctor may not be favored by some people as a general practitioner. Many churches expect their ministers to be married, the minister's wife as well as her husband having a function to perform in parish work.

Always along with the labor supply go the individuals who furnish it. Workers have to put up with the conditions that exist in a coal mine, a tropical plantation or a fishing vessel. They risk physical injury or loss of life itself. Their health or morals may suffer. Hence the conditions under which labor is supplied to industry have been the subject of special regulation on the part of the government, as is the case when so much air or window space is insisted upon for every worker, when machinery has to be fenced or it is ordered that ships are not to be loaded beyond the Plimsoll line.

THE NATURE OF THE LABOR SUPPLY

The term labor supply is variously used. Sometimes it means the *number of people*, regardless of their fitness or willingness to work. Sometimes the labor supply refers to the *number who are employed for gain*, either through selling their product or their labor. Again, it may represent

the number of people who are *employed in paid jobs*, that is, those who sell their labor as distinct from those who sell the product. Or it may mean the *number offering their labor in a particular area or occupation*. Then, recognizing that for some purposes twelve hours work from one man may mean the same as six hours from each of two individuals, people may speak of the labor supply as referring to the *number of hours of work performed*. Or they may allow for intensity and consider the supply in terms of its product, that is, the *quantity of work turned out*. Each of these meanings is appropriate in the proper circumstances, but the fact that there are so many of them makes it necessary to use considerable care in speaking of the labor supply.

RELATION OF THE SUPPLY TO THE WAGE PAID

Connection between wages and the number of people

Many years ago it was thought that there was a natural tendency for population to increase within the limits set by the capacity of the food supply to maintain members. If an improvement took place in the methods of production so that there was more food, immediately wages (as measured in food) would rise, but ultimately there would be an increase in population, it was argued, so that the wage could not rise permanently above the subsistence level. This explanation of wages was connected with the *Malthusian theory of population*, which received its name from an English writer, Thomas Malthus, who stated it. According to the Malthusian theory, the food supply set a limit on population. Population continually pressed on the food supply.

No doubt there was some truth in this explanation of wages and population at the beginning of the nineteenth century, when the theory was stated, as probably there is today in such countries as India and China, and even among

backward groups in America. In a restricted sense the theory has a certain general applicability in that it is noticed that, during depressions the numbers of marriages and births decline, and when recovery takes place they increase. But it cannot be said that the theory is applicable beyond this. Many married people, indeed, voluntarily restrict the number of their children in order to enjoy high living standards.

Relation between wages and numbers in jobs

Shifting between the ranks of the idle and self-employed, on the one hand, and the wage-earning class on the other, takes place *both ways* in response to alterations in wages. In the early 1930's, when wages were very low and unemployment was serious, many workers left the cities for the country districts, withdrawing themselves from the ordinary labor market.¹ But a large number of women and children sought jobs, who had no need of them so long as the head of the family was employed. Similarly, during the high-wage period of the Second World War, people moved into the city factories from country districts, and numerous women and high-school boys took jobs. At the same time, some youths, and especially girls, stayed longer in school than they would have done otherwise, or entered college, because the higher incomes being received by their parents at the time made such a course possible.

It seems evident that two motives are at work here. On the one side is the inducement that a higher reward offers, leading people to accept positions. On the other hand, the rigidity of living standards operates to take some labor out of the market when wages are high. These persons or families sell only enough of their labor to secure the desired living standard, because of the attractiveness of other ac-

¹ Probably, however, many of those who moved away from the cities came from the ranks of the unemployed.

tivities. The same is true of low wages. Some individuals withdraw their labor if wages are low, presumably because they have an alternative source of income that is more attractive. But others are impelled by their attachment to a fixed standard of living to do more work because wages are low.

Relation between wages and numbers seeking employment in particular areas and occupations

Another important response is that shown by numbers to income differences. Migration within countries takes place on a large scale. In the past an enormous amount of international migration has taken place, a fact that of course explains the presence of the white race in America, as well as that of Negroes and Orientals. Despite the severe restrictions imposed by the various governments in recent years on movement from one country to another, a certain amount still occurs. This migration between different countries has a number of causes. Political persecution, the search for religious freedom, dislike of military service, and sufferings caused by repeated wars have brought many people to America's shores in the past. But in part the movement has had an economic foundation, and the same is true of migration within the country. Migrants have moved from areas where incomes are low to those where rewards are more attractive. As between one occupation and another, also, a higher wage is an effective force in causing workers to move into an industry which offers better pay from others where wages are lower.

Probably few individuals move from one district or country to another, or even from one industry or job to another, solely on account of higher wages, unless the difference in wages is large. Preferences regarding the job itself, the place of residence, friendships and social relationships, oppor-

tunities for the education of children, the personal qualities of the employer and of fellow-employees, as well as other factors, enter into such decisions. It is those who are most dissatisfied where they are, those who have fewest ties with their present jobs or localities, those who attach most importance to high real incomes, and those who love change and adventure, who tend to be attracted away.

Sometimes a move into a new job or industry is decided upon because it is felt that the disadvantages attending it (in the form of a lower wage or the difficulty of learning a new task) are less than those which would accompany moving to the old kind of job in another area. In other instances both types of shift are involved, as is the case when a man moves not only to another occupation but to a new locality.

Interoccupational movement varies in difficulty. In some cases the degree of skill necessary in an occupation which affords openings for additional labor may be so great as virtually to preclude movement into it by mature workers in other industries. At the other end of the scale is the job for which little specialization is needed, or where the skill which the worker already possesses can be utilized. Formerly, before mass-production methods became usual in industry, workers very commonly progressed from one job to another within the same firm or industry. Movement then tended to be *vertical*, as it may be called. Now the more usual type may be described as *horizontal*, because specialized machine minders, office workers, salesmen or executives move readily from one industry to another. The problem of interoccupational mobility is studied further in a later section of this chapter.

Relation between wages and hours or quantity of work

Frequently higher hourly rates of wages are paid for overtime, workers having shown themselves unwilling to offer

their labor for exceptional hours at the usual rate. In some instances *piece-wages* are paid, that is, the wage is made to depend on the amount the worker produces. Workers are paid more, as an inducement for them to produce more.

But again we find on occasion the phenomenon mentioned elsewhere, that some workers are so satisfied with their accustomed living standard that their reaction to a higher wage is to work less. Perhaps they accept the extra pay for overtime for one day but stay at home on the succeeding day.

THE DEMAND FOR LABOR

In Chapter 12 it was shown that the demand for labor, like that for other factors of production, depends on the value of the product. As more of the factor is offered in the market, the increased quantity finds employment only at a lower rate. The demand takes the form of a curve, therefore, whose slope is governed partly by the price of the product and the efficacy of the factor in producing it. The slope is affected also—as we have seen—by the degree to which other productive factors can be substituted.

OCCUPATIONAL WAGE DIFFERENCES

If mobility between the different occupations were easy, undoubtedly wage differences would tend to equate the relative attractiveness or net advantages of the various employments. Several factors have to be considered here.

Relative attractiveness of different occupations

Some jobs are learned easily, while others require a long and expensive training. A comparison between the years of training required of a physician and the brief tuition given to the girl who answers his telephone illustrates the great differences which sometimes exist.

Risks of various kinds are a consideration. The chance of

accidents and of occupational diseases are very great in some jobs. The driver of an explosives truck, an employee in a railroad shunting-yard, a lead worker or a coal miner all run their special risks. In other cases rewards may be highly speculative. In some occupations, like art and literature, only a few may achieve success, although many may try for it.

Employment may be regular throughout the year and assured for the length of the working life, as is the case with civil-service workers. The strongly cyclical automobile and building industries may be contrasted with these stable occupations. Employment in cyclical industries may be very brisk in a time of general prosperity, but much unemployment may exist in periods of depression. In some occupations activity is seasonal, as in building construction in northern districts.

Then there are other amenities and drawbacks. A physician or a fireman may be called upon to work at night. A lighthouse keeper or a prison warden has to live under conditions which many people would find intolerable. Some positions are held in great social esteem, as those of government officials and clergymen, while others are thought less well of or are distasteful.

If movement were easy, no doubt workers would compare the various occupations with respect to such points. One individual would balance them differently than another, because the first would attach importance to a feature about which the second cared very little, or what one may regard as a good point another may think objectionable. Some people find zest in speculation, for instance, and others dislike it very much.² But if movement were possible, then presumably wages in the various occupations would equate their relative advantages.

² The relationship between risks and rewards is examined in some detail in Chapter 16. See pages 229-230.

Extent of labor mobility

Mobility is influenced somewhat by economic conditions, being greater in periods of prosperity. Personal factors affect it. Natural endowments differ; and occupations which require much imagination, tenacity or dexterity are denied to those who are not well-equipped in this way. Positions for which expensive training is necessary are limited to those whose families can afford it or who are able to win scholarships.

A boy or girl may grow up in a family or a community where little is known of a particular industry or where prejudices prevent any adequate consideration of its opportunities. Once youth is past, new handicaps arise in making a change. Re-training may be impracticable because of the necessity of maintaining a family, or because the rigidities of mind and muscle, which come with age, prevent it. But a certain amount of movement is always possible. A farmer may work on a threshing outfit, a teacher may sell books or an automobile worker who has had experience with backyard chickens may become a poultry farmer.

The longer the period taken into account, the greater is the possible movement between one employment and another. Old people retire and die, young people grow up and can be directed into the occupations which seem most promising. Yet in some instances generations pass without there being sufficient movement among industries to keep their various wages in conformity with each other. Thus, the coal-mining industry suffered severely in some areas during the period between the two world wars, largely because of the increased use of oil and water as competing sources of heat and power. In consequence the incomes of all those who were connected with the mines remained low. Because many of the mining districts were isolated, the young people could not move away readily into other occupations, and as a result

employee may be absent for extended periods in connection with childbirth and, where a public prejudice exists, this must be taken into account.

Consequently, women tend to enter employments in which they are able to compete effectively. In some occupations they are able to displace men almost entirely, as in certain branches of the retail trade. Personal attractiveness is an advantage in a position of this kind, and the necessary skill may be acquired during a short period of training. Little loss occurs on the score of training when a woman leaves her job at marriage, and she may indeed return to the job irregularly. There are a sufficient number of supervisory positions and others involving skill and responsibility, such as buying merchandise, to provide for those women who either do not marry or, having married, wish to continue in regular employment.

Sometimes it is said that *men's wages ought to be more than those of women* because usually men have families to support, while women have not. A competitive system of business cannot operate on this basis. A retail store paying higher wages to men would fail in competition with another store employing women who receive lower wages. What happens, therefore, is that men enter occupations in which they have some advantage over women and on this account are able to secure higher wages. The advantage may be one of physique, it may be derived from a more lengthy training than is justified ordinarily for women, or it may rest on some factor of custom or prejudice.

It is said also that there should be *equal pay for equal work*, the implication being that women should receive the same wages as men. Probably this is largely the case in competitive business at the present time. It is true that women frequently are employed in the same occupations as men at lower wages than are paid to the men but often the explana-

tion of this is that they are not considered to be equal to men in productivity. In such situations, an insistence on the same wage for both sexes will tend to throw the women out of employment. Many disputes on this subject arise because the relative productivity of men and women workers cannot be measured. In piece work this difficulty does not exist.

Much the same is true of the Negro and the immigrant. Their abilities and skills frequently differ from those of their competitors. In some localities racial feelings are very strong, and a Negro therefore may be disqualified for a particular position. A citizenship requirement may prevent the employment of an immigrant who has not become naturalized. The Negroes and the immigrants therefore go into those employments in which they are able to compete successfully, and in some instances they secure employment by accepting lower wages. Insistence on an equal pay rule would operate to throw the Negro out of employment when he is less efficient or when there is a racial feeling against him. It may be mentioned that some South African labor unions, dominated by white workers, have supported the equal pay rule for this reason.

LABOR UNIONS

The labor union is essentially a *bargaining organization*, though in some countries a varying amount of social insurance has been furnished by the unions, such as benefits payable in sickness or unemployment. Strike benefits are provided by unions almost everywhere but this is merely a support to the bargaining function, as we shall see later.

Ordinarily a labor union aims at enrolling all the workers engaged in a particular plant, craft or industry, and sometimes those employed by a single firm. Through a union, the workers are able to bargain regarding wages and working conditions on a single-seller or monopoly basis. Probably no

fields are fully organized in the sense that every *potential* worker is a member of the union, but some unions include all workers *actually employed*.

We can imagine the following to be the extreme cases.

(1) Neither side is organized to any great extent, an example being that of city housewives who engage domestic servants.

(2) Organization is one hundred per cent on the employers' side but unimportant or absent on the part of the workers. An instance of this was seen in the federal government engaging the services of soldiers during the two world wars. This was monopoly in the extreme, because not only did the government fix a wage lower than most people regarded as adequate to compensate the risks and discomforts involved but it compelled the individuals it selected to supply their services at this wage.

(3) One hundred per cent organization exists on the employees' side but there is little organization among the employers. Such trades as plumbing in some districts are examples.

(4) There is one hundred per cent organization on both sides, as with the railroads in some countries and in some branches of the railroad industry in the United States.

In practice probably every conceivable variation between these several extremes is represented.

The efficiency of labor unions as bargaining instruments is diminished greatly if many workers are outside the organization, because these outsiders are able to make their own bargains and remain at work in the event the union orders a strike. As we have learned in Chapters 8 and 12, the demand for labor over any considerable period ordinarily takes the form of a curve, with more labor employed at low wages than at high levels. A strong union can secure a high wage for a time, because employers have their capital in-

vested in plants which are of little value if they cannot be operated for lack of workers. In longer periods, however, the employers are able to adjust production methods so as to require less labor. They may introduce more machinery, use less unionized labor and more of types that are not unionized, or perhaps shift production to non-unionized areas. If they cannot make any of these changes, then in the absence of countervailing factors the product must sell for a higher price and some plants will be allowed to wear out without being replaced. Hence, over a sufficient period of time, a wage above labor's productivity tends to reduce the demand for the labor concerned. Some workers lose their jobs or retire as they become older without being replaced by younger recruits. Often adjustments of this kind will throw men out of work. To prevent such men undercutting the union wage to secure employment, unions in some countries pay unemployment benefits to their members, sufficient to cover minimum subsistence.

The bargaining power of a union is increased if it can effect a contract with the employers to hire only union members. This is the so-called *closed shop* agreement, and many strikes have been called to enforce its acceptance by employers. Not only is a union which possesses such an agreement in a better bargaining position against the employers, but it is strongly placed to maintain discipline among its own members, because an offender can be dropped from membership in the union and therefore rendered ineligible for employment in the occupation concerned.

Employers on their side have endeavored to secure one hundred per cent agreement among the employing group, so as to have the advantage of a buyer's monopoly. They also try to insist on an *open shop*, that is, on having the right to employ non-union labor as well as union members.

The strike and lockout

In wage negotiations the ultimate strength of each party rests on the injury which its withdrawal is likely to cause the other side. (See Chapter 12.) The strike withdraws workers from the plant. The lockout closes the plant, that is, it withdraws the plant from the workers. Let us examine the injury caused to the opposite sides by such actions.

Unless their finances are strained by other factors, even a lengthy strike or lockout is unlikely to bankrupt the employers or cause them severe injury from loss of income. Yet a shutdown is costly, unless indeed it is desirable for other reasons, such as lack of orders for finished goods. Many business expenses continue even if there is no income. Customers may be lost permanently if their orders cannot be filled and they make connections with other suppliers. If these losses are taken along with the profits foregone by a shutdown, evidently it may appear preferable to grant a wage increase rather than risk an extended stoppage.

On the employees' side, few workers possess resources adequate for a long period of idleness. Consequently a union may be unable to hold its members together during a lengthy strike. Strike benefits are usually paid from union funds to meet the living expenses of members who are on strike, and sometimes these are extended to non-members who join in the strike. Assistance may be sought from other unions. But if a strike lasts for a very long time, the union funds become exhausted and the strikers either drift to other occupations or return to work without union permission. Under these circumstances the power of the union is broken.

A long strike is almost certain to involve losses to both sides far beyond the wage difference that is at stake. Strike and lockout threats are used frequently to cow opponents into submission or at least into compromise, rather than

with the intention that they are to be carried out. Strike threats and strikes themselves are more common in periods of rising prices and business prosperity than during times of falling prices and depression.³ Not only do workers feel that they should be given a share in prosperity, through higher wages, and need them to meet rising living costs, but the employers are in a weak bargaining position. The losses caused by a strike are likely to be serious under such conditions. For their part the workers feel safe because jobs are plentiful. Lockouts come more commonly under conditions of price decline and depression. Employers feel the need for wage cuts and they may have stock-piles from which their customers can be supplied, while the workers are in a weak position because of the general scarcity of jobs. Although the immediate issues may be small in comparison with the losses resulting from continuance of a strike or lockout, once a battle has been begun it may be fought very bitterly because of the passions that are aroused.

Conciliation and arbitration

A strike or lockout may cause serious inconvenience and loss to outside parties, so that commonly outsiders attempt to bring about peace between the disputants. Government officials, mayors or state governors, or eminent outsiders who have the public interest at heart, may offer their services in an effort to bring agreement between the parties. This process is called *conciliation*. Some governments have regular officials and machinery for this purpose. Or the parties may refer their dispute to *arbitration*. This is a judicial process, in which evidence on the points in dispute is submitted to an arbitrator, who examines the merits of the case and issues

³ With respect to the association of rising prices with business prosperity and of falling prices with depressed conditions, see Chapters 20 and 21.

an award or finding, which the parties may or may not have bound themselves beforehand to accept. Even a non-binding award has a certain force behind it because it receives publicity and the pressure of public opinion may compel its acceptance. In some countries, the arbitration of labor disputes has been made compulsory.

Political action

In certain foreign countries labor unions have associated themselves for many years with political parties, as they have with the socialist Labour Party in England. But in America labor unions for the most part in the past have abstained from lasting political alliance. Particular candidates who were thought to be favorable to the unions have been endorsed, but there has been no very serious attempt to form a uniform and effective labor pressure group. The Congress of Industrial Organizations, one of the two main labor-union groups, however, established its Political Action Committee in 1943 for this purpose, and there is little doubt that the vigorous efforts of the committee to marshal labor votes behind President Roosevelt in the 1944 election helped considerably in securing his re-election. It is recognized, however, that such activity is likely to arouse antagonism among other citizens, and on this account it is not always clear that it benefits the unions and their members in the manner intended.

Types of unions

Three major types of union have been developed in this country. In the latter part of the last century, an organization called the *Knights of Labor* was set up with a view to including *all workers*, and there have been other attempts along this line. At present the main forms of union are those

representing the *craft* or skill (carpentry, for example), and the *industry* (automobile manufacture or coal mining).⁴

Highly specialized workers are in a very favorable position in wage bargaining. Frequently there are relatively few members of a particular trade employed in a plant and yet if they strike the entire plant may be brought to a standstill. Thus, there may be few patternmakers (woodworkers or carpenters who make patterns for castings) in an iron plant, and yet without them new operations cannot proceed. Under such conditions it may pay the employer to grant high wages to these specialists rather than suffer the loss entailed by closing down the entire plant for the duration of a strike.

Often it is difficult to enter a trade of this kind because considerable training is required and, once the workers have acquired their skill, they are reluctant to leave the industry. Such trades are easily unionized and the unions have a coherence and endurance which are not often found in other fields.

The effect is that these specialized trades have long been well-paid and their members have been the elite of the labor world. This being so, the craft unions have been conservative and fairly satisfied with things as they are. It is these unions that in the past have formed the main body of the American Federation of Labor, an association of unions which has for many years been the most influential labor group in this country.

But recently the situation has changed. Mass production on a machine basis has replaced some of the old specialized skills. Workers can move into and out of the new form of industry rather easily, or they can move from one job to another within a plant. The foundation of the craft unions'

⁴ A type of union intermediate between the craft and industrial organization can be recognized. This includes most but not all of the workers in a plant, as the machinists, for example.

power no longer exists in such an environment and unionization has taken an industrial basis. The coal miners have long been organized in this manner and similar unions have been created for the automobile industry and others. The Committee for Industrial Organization, founded in 1935, which later became the Congress of Industrial Organizations, has been very prominent in industrial unionism and recently has rivaled the American Federation of Labor in strength and influence.

SUMMARY

The term *labor supply* has various meanings. Number of people, number in paid jobs, number in particular areas or occupations, hours of work performed, and quantity of product turned out all have their uses. The relationship between each of them and the wage is considered in this chapter, as is the demand for labor.

Occupational wage differences have to be interpreted in terms of mobility. When labor can move freely from one job to another, wage differences tend to reflect the relative advantages of the several employments. But in the absence of labor mobility, supply and demand conditions in the separate markets determine the wages of the workers concerned. Movement is easier in longer periods but in some instances immobilities last for generations. The special position of women and Negroes is given attention.

Labor unions are bargaining organizations whose strength comes from their capacity to withdraw labor and thereby to bring the production process to an end. The craft unions have been influential in former years but recently industrial unions have come into prominence.

EXERCISE

Call at the office of a labor-union local, if there is one in your district. Ask if you might be permitted to see a list of

rules to which members must conform. See how far these are explained by what you have read in this chapter.

WAGES, MARGINAL PRODUCTIVITY, AND THE VOLUME OF BUSINESS

In Chapter 21, attention is paid to the general level of business. For a full understanding of wages, it is necessary to bear in mind that when the volume of business is relatively large, but yet there is not full employment of the productive factors, the marginal productivity of the factors, measured in money, tends to be high. Sales are made easily and output can be expanded without corresponding increase in costs of equipment. Employers can afford to pay relatively high wages under these conditions. Since the spending of the wages by their recipients itself tends to keep up sales volume, to this extent the high wages pay for themselves. But see Chapter 21 and the note following that chapter, where reference is made to other factor-prices.

PROBLEMS

1. A physician charges four dollars for a five-minute visit to the sick wife of a plumber. The plumber gets two dollars for half an hour's work on the water system in the physician's house. Both of them hire a garden boy and pay him fifty cents an hour. List the causes of these wage differences.
2. Suppose that a strike is threatened in an engineering plant. As the employer, you are weighing the pros and cons of acceding to the demands of the workers. What factors would you take into account?
3. In the situation referred to in the last problem, what factors would you consider if you were a labor-union official?
4. If a federal law were passed requiring an equal wage to be paid to everyone engaged in the same occupation, what do you think would be the effects?

CHAPTER 14

INTEREST

Interest is defined commonly as the price or yield of capital. Before proceeding to discuss interest proper, however, something must be said regarding other elements of the return on capital.

OTHER ELEMENTS OF RETURN ON CAPITAL

Depreciation

When assisted by tools and machines, ordinarily labor produces more than would the same labor unassisted. The additional product requires some examination. Machines wear out and therefore it is evident that a portion of the gross product must be set aside on this account before it can be said that there is a net product, in the sense that the machines have added something. This portion is called *depreciation* by accountants and they calculate it by prorating the cost of the machines over their expected lives in time or output. Depreciation, as thus calculated, is regarded by accountants as part of production cost. The socialist, Karl Marx, who objected very strongly to interest, admitted that the income from using a machine must replace the labor expended on constructing it and the income-tax authorities of our own days permit businessmen to deduct an allowance for depreciation in calculating the income from their enterprises. For instance, if a machine costs originally a hundred dollars and is expected to last ten years and be without scrap value at the end of this period, ten dollars a year for depreciation is included with the other costs of the enterprise.

Depletion

Where capital is invested in a wasting resource, such as a mine, the proportion of the return which represents the diminished capital value of the property in each working period is called *depletion*. Depletion in respect to a mine corresponds to depreciation of a machine and is looked upon in the same manner by the income-tax authorities. However, whereas ordinary enterprises deduct depreciation before paying dividends to their stockholders, neither law nor practice requires mining companies to do so. Hence, mining company dividends frequently—although not always—have to be regarded partly as a return or repayment of capital (depletion) and only partly as interest on the capital investment.

THE NATURE OF CAPITAL

Terminology

Something was said in Chapter 1 on the subject of capital but it is necessary now to develop this further. The name capital is employed sometimes to mean a stock of goods, those useful for consumption being called consumers' capital and those whose value lies in their capacity to assist in production being known as producers' capital. But just as we can speak of *real wages*, as meaning the goods that labor can command, in the shape of food, clothes and other commodities, as distinct from *money wages*, which mean the money for which labor sells and which can be used to purchase these goods, so we can employ the name capital to refer both to the real goods mentioned above and the money which will buy them. Capital, therefore, when expressed in *real* terms, becomes factory buildings and machinery (producers' capital) and furniture and automobiles (con-

sumers' capital). Expressed in *money* terms, it refers to money whose possession confers on its owner the power to purchase these real things.

In ordinary usage, the exchange of money for goods is called spending or investment, *spending* being employed to denote the purchase of goods for consumption purposes and *investment* the acquisition of goods (or titles to goods, such as stock certificates) not because they are directly useful but because they produce an income. Commonly the word saving is distinguished from investing, *saving* being the process whereby an individual or group withholds from consumption a portion of income, thus making the saved portion available for investment if desired, and *investing* the process of devoting the saved portion to the purchase of what may be called income-yielding goods, or capital goods, or, alternatively, to the purchase of claims on such goods. In this sense, the withholding of part of one's income from spending constitutes saving, while the use of the money thus saved for the purchase of capital goods or securities is investment. In recent years, however, some economists have confined the use of the word investment to the spending of money for the construction of capital goods, as distinct from merely purchasing from other people claims on capital goods already constructed. The purchase of a bond or share of stock represents only a shifting of money from the purchaser to the seller, in exchange for a transfer of ownership in the other direction. It adds nothing to the quantity of capital goods in existence. Defined in the new and limited way, investment differs from this, because it means that more capital goods are brought into existence.

Sometimes capital in the money sense, as defined earlier, is called *capital-disposal*, to distinguish it from capital in the real or capital goods sense, but the term has not come into general use. It also has been called *waiting* but this

name too has not received wide adoption. The money or waiting aspect of capital receives attention in the next section.

WHY INTEREST EXISTS

In general, it can be said that capital is paid for (a) because it is productive and (b) because it is scarce. If plenty of it could be had free of charge, then so much of it would be employed that its marginal productivity would be pushed down to zero and economists would have no occasion to bother about it.¹

In Europe in the middle ages, interest in its more obvious forms was called *usury*. It was regarded as immoral and accepting it was prohibited to Christians. There was a partial justification for this view in that the demand for capital for productive purposes at that time was very small but nevertheless a considerable black market in loans developed, high rates of interest being charged, partly because of the risks, which are attached to all black-market operations, of the operators being discovered and penalized. People desired loans and were willing to pay for them.

Loans are wanted for two broad purposes, first to *finance the production process*, which involves meeting production costs before revenues are received from the sale of the product, second to *finance consumption*, that is, to make it possible for individuals to consume before they have an income from which to pay for their consumption.

The need for capital in the production process

Enterprisers want capital because equipment adds more to the product than it costs. In other words, labor, aided by machinery, produces more than unaided labor is able to produce. A fisherman, for instance, finds that he can catch more fish by spending part of his time in making a boat and

¹ See Chapter 8, pages 106-107.

rod or net, and devoting the remainder to operating these tools, than he could by wading in the water and attempting to catch fish with his hands. If tools could be made and utilized instantaneously, so that the product could be obtained just as soon by the roundabout method of making tools and using them as by the direct method of hand labor, then there would be no reason why anyone should pay for loans with which to purchase tools. But in practice this is not the case. The production of tools takes time and the workers who make the tools have to be paid long before any product is obtained from the use of the finished tools. In some instances, even after the product is completed, more time is required before the income from it can be received. The income from a completed house, for example, arises as the house is lived in by its occupants over many years. Costs have to be met, therefore, far in advance of the receipt of the income on whose behalf they are incurred.

Someone has to wait for the product. If the workers who make the tools which are employed to build a house can themselves wait until, years after, they get paid by being allowed to reside in the house, no loan is required on their account. But ordinarily a tool manufacturer expects to pay his employees their wages before the tools are marketed, the contractor who buys house-building tools plans to pay his workers before the house is sold, and the buyer of the house pays for it ahead of the time when the income from its use is received.

All these people are in the position of paying out before they receive. They are able to do this only if they, or others, have somehow received before they are obliged to pay out. Thus there are two sets of people in the market in which loans or capital-disposal are negotiated. On the one hand there are those who want money now in return for an undertaking to repay later. On the other hand are those who have

money now which they are willing to lend to others in return for a promise of repayment in the future. The relative intensities of the supply of loans and the demand for them, as thus explained, are what explain the interest rate.

If, at a zero rate of interest, there were so many savings that all the capital was forthcoming which is demanded when the use of capital is free of charge, there would be no interest. But so long as there is less capital than this, interest must be paid or some other method (such as rationing) used to determine which of those persons wanting loans shall have them. If the matter is left to competition, the price of capital, that is the rate of interest, will be that at which supply and demand are equalized. The feasibility of a zero rate of interest is discussed later.

THE SUPPLY OF CAPITAL

At one end of the scale are those individuals who prefer future consumption so strongly that, if it were necessary, they would be willing to pay for their money to be stored for future use. So far from demanding that interest be paid to them, they would be willing to make payment to others. This has happened in fact. In Europe in the seventeenth century there were bankers who charged fees for storing money. There are innumerable matters in life which necessitate saving for the future, such as annual vacations, children's schooling, and old age, as well as contingencies like accidents or illness. At present, we are so accustomed to a situation in which savings command interest that we accept it as a matter of course. But if nothing more advantageous could be arranged, no doubt there are many people who would agree to pay to have their savings safeguarded until needed.

At the opposite end are those who are caught in circumstances in such a way that they are prepared to pay very high

rates of interest in order to obtain capital. Examples of this case are the man who is threatened with a court action which will ruin his reputation if a heavy bill is not paid immediately and the one who has discovered an oil well or invention which he believes will return a high yield if capital can be secured to develop it.

Between these extremes, individuals of various types will react in their several ways to alterations in the interest rate.

Savings unaffected by interest changes

There are some whose savings can be expected to be unaffected by the interest rate. People who have a relatively fixed standard of consumption may save any income which they receive in excess of this, regardless of the interest they are offered. Probably many savers are in this position over short periods, because standards of personal and family expenditure change slowly, while sometimes incomes alter rapidly. Self-made businessmen often continue in some degree the parsimonious consumption standards of their youth and therefore are able to invest in their business a large proportion of the incomes which they receive in later life. Some very large enterprises have been built up on this basis. Farmers make large savings in years of good crops and high prices; so do many city dwellers during periods of relatively full employment. Even corporations, in many instances, pursue stable dividend policies whose effect is to leave available for investment in the enterprise itself the excess earnings of good years. Over longer periods, consumption standards and dividends tend to adjust themselves to income, so that savings of this kind are apt to fall off.

Savings diminished by higher interest

People saving with a definite end in view are more likely to adjust their savings in response to interest changes. Those

whose object is to accumulate a *fixed sum*, as for education or retirement, require to save less if interest rises, because their savings will accumulate more rapidly at the higher interest rate. Those saving to attain a *fixed investment income*, as sometimes is the case when a man plans to retire and believes that he knows fairly well what his weekly or yearly expenditure will be when his plans mature, have two reasons for saving less if interest rises. Not only do their savings accumulate more quickly, as before, but the sum they require to accumulate is itself less if interest is higher. A smaller capital amount will return the fixed income which is wanted, if the interest on capital is higher.

Savings increased by higher interest

In so far as individuals consciously choose between present and future consumption, as they do when they decide how much of their current income is to be spent and how much is to be saved, it seems probable that an increase in the rate of interest will encourage saving, because it increases the inducement to save. How important this factor is in relation to the entire capital supply cannot be said with certainty. Some leading economists have assumed that it is so important as to override the factors which operate in the contrary direction, so that total savings increase if interest rises. But data are insufficient to ascertain whether or not this is the case.

Probably a certain increase in the volume of saving results from higher interest rates in another manner. Those capitalists whose incomes are greater because of the rise in interest rates are unlikely immediately to increase their consumption proportionately and therefore may be expected to save more than they did at lower interest levels.

Effect of old age

One well-known economist hazarded the guess that the opposite groups canceled each other in ordinary ranges of interest, so that the total volume of saving showed no marked response to an interest change. But he made the exception that if interest were to fall to a very low level the supply of capital would fall off, because a large number of moneyed old people, in an attempt to preserve their accustomed standards of consumption, would draw on their capital to supplement their falling interest income. This again is something that appears plausible but on which there is no certain information.

Saving by corporations

An important part of the supply of capital comes from corporation profits which are retained for investment in the enterprise itself, in preference to being paid out as dividends to stockholders. Boards of directors no doubt have various motives when they decide on expansion programs and perhaps the desire of the directors to run a large enterprise is in some cases as important as what they think regarding the earning power of the additional plant. Certainly corporations which have decided upon expansion programs frequently limit dividends in order to provide the necessary capital.

Saving by government bodies

Much capital construction is undertaken nowadays by government agencies, which obtain the capital needed by the sale of bonds, by taxation or by inflation. If the government taxes people to obtain capital for construction purposes, as was the case on a large scale in Soviet Russia during the five-year plans, evidently it makes saving compulsory and perhaps disguises it; in Russia, for example, high prices were charged

for the products of government factories so that the profits (which in effect were sales taxes) might be available for this purpose. The United States government in the 1930's spent large sums on the construction of roads and buildings, obtaining the money by loans, taxes and inflation.

Saving through the creation of money and credit

If additional paper money is issued by the government and deposits are created by the banks in the form of loans, in excess of paper money called in and deposits destroyed by the repayment of bank loans,² and the extra money and deposits are spent in constructing capital goods, what has been called *forced saving* occurs. The spending of the new money and deposits acts in the market like any other demand for goods. It represents an additional demand for goods, which is not counterbalanced by an increased supply, so that goods rise in price. Those who spend the new money and deposits obtain some of the goods, at a higher price level than formerly ruled. Those who spend the old money and deposits, secure less goods, because at the higher price level their money and deposits command fewer goods than would have been the case if the lower price level had continued. If the new money and deposits are used to buy capital goods, what happens is that those who possess the old money and deposits are forced to save, in the sense that they are forced by the rise in the price level to forego their purchasing power over consumers' goods, in order that capital goods may come into existence.

Evidently, in so far as the new money and deposits are offered as loans in the capital market they have the effect of lowering the rate of interest. When they are spent on commodities, they cause a rise in the price level, as has been seen. Newly-created deposits are lent by the banks to enterprisers on a large scale during the upward swing of the

² See Chapter 18.

business cycle³ and are one of the chief means whereby the extensive construction of capital goods which is undertaken at such a time is financed. The general effects are the same, whether the money and deposits are spent by the government or by private enterprisers. In practice, the creation of money and of deposits go together, because the needs of business require a certain proportion of each, so that deposit creation calls into existence an increased quantity of currency and vice versa.⁴

Saving and the volume of employment

Another aspect of the capital supply must be noticed here, although its detailed examination will have to await a later chapter. To a large extent, the volume of saving depends on prevailing business conditions. When business is brisk and plants and workers are fully employed, incomes are high. Consumption is not increased proportionately to the rise in incomes, so that more saving takes place. On the other hand, when business is depressed, incomes are low and savings small. A notable British economist some years ago asserted that, if full employment could be maintained, the volume of savings would be so great that the rate of interest might fall to zero within a generation. Such an extreme statement may be doubted, if only because of the large demand for capital which could be expected at a zero interest rate, and this economist himself admitted that practical considerations precluded a zero interest rate. Yet there seems to be a certain truth in this general view. The enormous savings which were invested in war bonds in this country during the high-income period of the Second World War supports it, although in this case patriotic motives and the absence of many consumers' goods from the market militated against unnecessary

³ This is studied in Chapter 21.

⁴ See Chapter 18, page 265.

spending by the general public, so that the result might have been different under peacetime conditions.

Saving, liquidity preference and speculation

The term *liquidity preference* has been used with respect to the capital market. It is pointed out that people with capital are required to choose between holding it in liquid form, that is, as money available for spending for any purpose they may select, and investing it in some form of goods or property. They usually keep sufficient money on hand to meet their ordinary business and private payments as these fall due and, in addition, commonly they wish to keep a reserve for contingencies. But after these needs have been met the speculative motive arises. In times of falling prices, it is preferable to have money on hand rather than to own goods or investments, but in times of rising prices the opposite is true.⁵ If owners of money are trying to exchange their money for investments (that is, to purchase investments) to a greater extent than owners of investments are attempting to convert their investments into money, investments rise in price. This is the same thing as saying that the rate of interest falls, as will be seen later. Conversely, if those who own investments wish to sell them to a greater extent than owners of money wish to exchange it for investments, investment values will decline. The rate of interest will rise. Undoubtedly, large-scale shifts from money to investments and vice versa have a considerable effect on investment values, that is to say, on the rate of interest obtainable from securities.

Saving in response to government propaganda

Substantial saving took place in both world wars because citizens were persuaded that bond-buying was patriotic. Spectacular bond-selling drives were organized and individuals

⁵ See Chapter 20.

were given to understand that the interests of their country required them to cut down their consumption in order to purchase bonds. There is no doubt that the intensity of these sales campaigns in the second war helped to maintain low interest rates in face of large government borrowings for war purposes. The Soviet government in Russia sponsored saving in this manner to some extent in peacetime. Obviously this is another example of the way in which governments exercise influence over man's minds, so that a desired end is secured not by coercion but by persuasion, the people doing willingly what the government wishes.

THE DEMAND FOR CAPITAL

As has been mentioned already, capital is desired for purposes of both consumption and production. The latter of these requires further attention. Ordinarily, it is conceded that the demand for capital for purposes of production takes the form of a curve, demand falling as interest rises. This may be explained by the law of diminishing returns. Something was shown of its operation in Chapters 8 and 12, where the conditions underlying the enterpriser's demand for capital were studied. Here we shall examine how the law operates with respect to entire enterprises.

Businessmen are perpetually making paper projects, calculations regarding projected enterprises, which bring in both costs and returns for the purpose of reaching decisions. In each case, the question is posed; Is the projected enterprise likely to return more than its costs or not? With modern production techniques which render a large amount of capital necessary, costs are apt to fall substantially as interest declines, so that as a decline in interest takes place, more and more of these paper projects can be brought to the stage of reality.

A fall in the interest rate makes the same income worth

more. The income-yielding property, which represents the completed project, can be sold to outside investors at a higher price. Thus, if investors are content with four per cent on their capital instead of five per cent, a plant which is expected to return an income of \$100,000 after all costs other than interest have been met, will sell for \$2,500,000, instead of \$2,000,000 as it would if interest had remained at five per cent.⁶ Projectors and syndicates which finance new projects, in the expectation that later they can be sold to outside investors, are encouraged, therefore, by a lower interest rate. Moreover, as is shown in Chapter 21, the increased buying of labor and raw materials for capital construction which results may afford such a stimulus to employment and incomes under some conditions that it calls into existence itself the larger supply of capital which is necessary to maintain the low interest rate.⁷

DIFFERENTIAL INTEREST RATES

Hitherto, we have spoken as though there were only a single rate of interest at any particular time and place. This is not the case. There are a number of different interest rates. One rate applies in the market in which bankers and stockholders deal in funds which are subject to repayment on demand and are used to enable the brokers to pay for the stocks which they hold in the course of their business operations (the *call loan* market on the New York Stock Exchange). Another rate is applicable in the market for bills of exchange, used to finance international trade. Still another rules when the private banks resell to the reserve banks the bills which they have bought from their customers. The banks have several rates for different types of dealings with

⁶ \$100,000 is four per cent of \$2,500,000. It is five per cent of \$2,000,000. This subject is studied more fully in the last section of the present chapter.

⁷ See also the section on *Saving and the volume of employment*, earlier in this chapter.

their customers. Interest ruling in the bond market is different again, bonds selling at prices which reflect the date of repayment and the risk of loss or chance of gain involved. Stocks sell at prices which represent interest rates that vary according to their reputations and dividend prospects.

In general, the several rates tend to go upward and downward together and bear a fairly stable relationship to each other. Where it is feared that the interest or dividend on a security may decline, naturally a lower sum will be paid for the security, representing a higher interest return at the time of purchase. If it is thought that the interest or dividend rate will increase, a higher price will be paid for the bond or stock, with a correspondingly lower interest return at the purchase date.⁸ The purchasing power of money has to be taken into account, also. If the price level is expected to fall, then bonds are likely to sell on a lower interest basis than stocks, because the capital of bonds and their interest gain in purchasing power when commodities are cheaper, while dividends on stocks may be reduced under such circumstances. On the other hand, if the price level is rising, stocks are likely to sell on a lower interest basis than bonds.⁹

This illustrates the situation that interest rates alter in relation to each other. Here it has been indicated that the interest obtainable on an investment in bonds may change in comparison with that obtainable from stocks. Again, the interest on short-term lendings and borrowings may be relatively high in a time of crisis, when banks want to increase their holdings of cash, and very low when the banks are endeavoring to expand credit, although the rate of interest on long-term investments is likely to show less alteration.

Some securities sell on a very low interest basis because of

⁸ While bond interest is nominally fixed, in practice it may be allowed to fall into arrears, if the corporation which has issued the bonds is unable to pay. Stock dividend rates alter frequently.

⁹ See Chapter 20 on this subject.

special circumstances. Thus, in many states the law prescribes what securities are eligible to be bought by savings banks and if, as sometimes is the case, there is an insufficient supply of these on the market, the price is relatively high.

Other rates again are governed by custom or regulations and remain fixed over long periods, notwithstanding considerable changes elsewhere. An example is the interest paid on postal savings deposits.

THE SALE PRICE OF INCOME RIGHTS—CAPITALIZATION

Bonds are examples of rights to receive income which can be sold readily to people with money to invest. Stocks, rental property and profitable business enterprises are other instances. The process of determining the capital sum which should be paid for the right to receive an income is called *capitalization*. In capitalization, two factors must be determined: (1) How much is the income? (2) How much is to be paid for so much income, that is to say, what rate of interest is to be applied?

The capital value given to a certain income is merely the reverse of the interest rate. Three per cent interest means that three dollars are returned from an investment of a hundred dollars; a hundred dollars is the capital obtained by capitalizing an income of three dollars at three per cent. Aside from the repayment date, bond values are calculated by capitalizing the interest borne by the bonds, using a rate of capitalization which allows for whatever risk of loss is thought to be involved. An extreme case is the so-called *perpetual* security, which is never repayable but confers on its owners the right to receive a fixed income forever. The Canadian Pacific Railway Company has a large issue of such a security, called perpetual debentures and bearing an interest rate of four per cent. That is to say, four dollars interest is paid yearly on every hundred dollars of the face value of

the debentures. If conditions in the investment market are such that investors demand five per cent on the money they invest, a nominal hundred dollars of these bonds will sell for eighty dollars, because the four dollars yearly interest which is payable represents five per cent of eighty dollars. But if the investing public is content with three per cent, then a nominal hundred dollars of the debentures will sell for \$133.33. The four dollars of interest represents three per cent of \$133.33. On the other hand, if we compare a bond of equal risk also paying four per cent interest on its nominal or face value, but with repayment only a year ahead, a rise in the interest rate which the public expects will lower the price only to about ninety-nine dollars. The reason for such a small fall is that the buyer at ninety-nine dollars knows that he will make a dollar profit when the bond is repaid at its par value of a hundred dollars in the following year. This, added to the interest he gets, brings him the desired five per cent. Similarly with a decline in the rate to three per cent. The bond which has only one year to run before repayment will not rise above approximately \$101 for a bond of a hundred dollars face value, because at the price of \$101 a dollar will be lost on repayment, reducing the interest return to approximately three per cent.¹⁰ Thus a bond whose repayment date

¹⁰ The calculations are as follows:

Purchase price \$99 for bond of \$100 face value, returning \$4 interest.

$$\text{Interest yield} = \$4 \times \frac{100}{99} = \$4 \text{ approximately}$$

$$\text{Repayment profit} = \$1 \times \frac{100}{99} = \$1 \text{ approximately}$$

$$\text{Total yield} = \$5 \text{ approximately}$$

Purchase price \$101

$$\text{Interest yield} = \$4 \times \frac{100}{101} = \$4 \text{ approximately}$$

$$\text{Repayment loss} = \$1 \times \frac{100}{101} = \$1 \text{ approximately}$$

$$\text{Total yield} = \$3 \text{ approximately}$$

is close at hand is subject to little risk of price fluctuation, either upward or downward. A bond repayable at an intermediate date, say in five or two years' time, falls between the two extremes. Its price fluctuates more with interest changes than that of the one-year bond but not so much as the price of a perpetual security. In general, the rule can be laid down that the longer the term for which a bond has to run before it is repaid, the greater the fluctuation which is likely to take place in its price in the event of changes in the interest rate ruling in the bond market. Hence, institutions like banks, which desire to avoid risks of price fluctuation, have for long regarded the so-called short-dated bonds, that is, those whose repayment or redemption date is near, as preferable to long-dated bonds, whose repayment date is far ahead.

SUMMARY

The apparent return on capital includes depreciation and, in some instances, depletion, as well as interest.

Interest exists because there is an insufficient supply of capital to meet the demand which would exist at zero interest, and its rate is determined by supply and demand. The rate affects the volume of saving in different ways and other factors also influence saving, such as the creation of credit and the volume of employment and income. Government propaganda in wartime had a considerable effect. The demand for capital is conditioned by the law of diminishing returns. Not only is more capital employed in existing enterprises, as interest falls, but new enterprises are stimulated.

In practice, there are a number of interest rates, which although in part governed by the same factors, are subject to their separate influences. The process of capitalization is explained.

EXERCISES

1. Obtain a newspaper which gives stock exchange quotations and similar data. Calculate the rate of interest on his capital obtainable by an investor who purchases, at prevailing prices,

(a) a government bond,

(b) common shares of several corporations whose names are familiar to you (usually the annual dividend rate is indicated against the name of the stock in the quotation list).

2. Ask a local bank, or the savings department of a post office, what rate of interest is paid on savings deposits. Note the rate. Ask whether any limit is placed on the sum which one person is allowed to deposit. If so, what limit? Note the limit.

PROBLEMS

1. Explain the differences in the interest rates shown as the result of Exercises 1 and 2 above.

2. If in Exercise 2 you find that a limit is placed on the sum that an individual is permitted to deposit, say why you think such a limit is imposed.

3. A savings bank advertises that it pays 1% of deposits and lends money for the purchase of houses at 5%. Why is there such a difference in interest rates in the same institution? This question will be asked you again after you have studied the chapter dealing with commercial and other banks.

4. Banks invest a considerable proportion of their deposits in government bonds. Supposing that a run on the banks were to take place, so that the banks put many of these bonds on the market. What do you expect would happen to (a) the market price of bonds and (b) the rate of interest which buyers who purchase such bonds on the market would secure on their investment?

CHAPTER 15

RENT

In economics the word rent has two meanings. The first accords with that given to it in popular usage. Just as wages are the income from labor, so is rent the *income from land*, or more broadly from natural resources. The second meaning is that rent is a *surplus*, which is something that will have to be defined later in the chapter. Here, however, it may be said that this meaning of rent arose from the fact that the rent of land was regarded as a surplus and therefore all surpluses came to be called rents by some writers. We shall study the two in the above order.

LAND AS A FACTOR OF PRODUCTION

What is included

As indicated in Chapter 1, land in economics includes not only land, as generally understood, but also minerals, water power, forests and wild animals.

What constitutes quality

Since the word *quality* is used in connection with natural resources in a rather unusual way, it is well to define this term also. Quality of land may refer to advantages of various kinds, fertility, proximity to markets and to related natural resources, as well as such conditions as climate and water supply. A saving in transportation costs adds just as much to the value of land as an equivalent saving in the costs of cultivation. The same is true of ore deposits—poorer ore that is closer to a market may be just as profitable as ore of a higher grade located farther away. Since coal and iron are

used together in smelting, coal and iron that are near together are worth more than the same minerals widely separated. A soil may have abundance of the minerals requisite for fertility but if water supply limits what can be produced on it the over-all quality is low. A fertile soil, plentifully watered, still may be useless if it is located in such a northerly latitude that the summers are too short for a crop to ripen.

Economic and non-economic factors of production

It is evident that land varies greatly in quality. On the one hand, we have rich valley soil so situated in relation to climate and markets that it is of great value for agricultural purposes, and land which is so desirably located in centers of population that it is valued at a considerable amount per square foot. On the other hand, there are extensive areas of land which no one believes to be worth anything. The tundra of Northern Canada, the Kalahari and Sahara deserts of Africa and innumerable stony hillsides in America will serve as examples. Every conceivable quality exists between these two extremes.

Land of superior quality is scarce in relation to the demand and therefore it commands a high price in the market, sometimes a very high price. But even in those parts of the United States which are fairly thickly settled, much land is so poor that it does not bring any price beyond the value of the improvements. In fact many farms sell for much less now than the buildings on them would cost to construct at the present time, even allowing for wear and tear. In many instances improved farms have been abandoned by their owners because they were not considered worth keeping.

While this situation is apparent to all in the case of land, it is not peculiar to this factor of production. There are some people who are workers in the sense that they are willing to work, but whose efficiency is so low that employers would

not think it worth while to give them jobs even if they asked no wages. They require supervision and equipment and their productivity is insufficient to meet the cost of these, without allowing anything for wages. An example of this situation was observed some time ago when a social-work supervisor complained of being pestered by well-intentioned men and women who asked no salaries but were of so little service in the organization as not to be worth having. The same is true of capital goods, as anyone who has driven past an automobile junk yard is able to testify. A new automobile may cost over a thousand dollars but in time the car is sold for a few dollars to a junk dealer, who proceeds to remove the saleable parts and throw away the remainder.

The extensive margin, or margin of cultivation ¹

Just where the line is drawn between productive factors worth paying for and those which are not depends on circumstances. If population increases, so that the need for food is greater and its price higher, some land hitherto not thought worth using is taken into cultivation. An old car, which had remained unsold in 1941 when new cars still were available although its price ticket was only a few dollars above the junk value, might have found a purchaser in 1943, because cars which will run at all are in demand when no new ones are being manufactured. Faced with an additional demand for social work due to war conditions, which themselves have reduced the supply of more efficient labor, our social-work supervisor gives jobs to one or two of the people whom in peacetime he regarded as nuisances.

Other costs enter into the problem of where the line is drawn. Just as labor which would add to the product remains unemployed because the additional product is less than is

¹ *Extensive farming* means spreading the capital and labor over a large area, as distinct from a small area, hence this name for the margin of cultivation.

represented by the wage, so with land. Low-grade land is not always costless, since usually occupancy of it entails meeting taxes levied by local governments. As a result, land which is productive, in the sense that it would return a revenue above all costs other than taxes, lies uncultivated if the revenue remaining after all other costs have been met is insufficient to pay the taxes. Many American farms have passed out of cultivation for this reason. The process has been cumulative. In old-settled areas where farming has declined in prosperity and some farms have passed out of cultivation, local governments have attempted to maintain their tax revenues by increasing the tax rates on the farms still cultivated, with the result that more farms are abandoned. *Generalization: the more the price of a product rises, the more land is cultivated.*

As with the cultivation of farm land, so with mining. The better ores are worked and the poorer ones remain untouched. But if the price of the product rises, in comparison with the cost of obtaining it, the margin of mining will be extended and the lower grade ores will be worked. This happened in gold mining after the price of this metal was increased in 1933-1934 when the government's buying price in this country was raised about seventy per cent. Conversely, during the First World War, gold mining costs increased substantially, without any corresponding increase in the price of the metal, and mining of some of the lower grade deposits was given up. This occurred in the second war also, although labor regulation was an important factor in that period.

The intensive margin or stopping point

The same factors, which cause poorer land to be taken into cultivation or lower grade ore to be mined, stimulate the more intensive working of resources already in use. In Chapter 8 we saw that if the price of a gardener's product increased

while the cost of the seed remained the same, or the price of the seed went down when that of the product was unchanged, more seed was planted and production was increased. This is spoken of as more *intensive* cultivation. The stopping point of the enterpriser, the point at which he ceases applying capital and labor to his land, is called the *intensive margin*. The gardener's position in this respect was characteristic of all exploitation of natural resources. If the product is in greater demand, so that it sells for a higher price compared with what it costs to produce, there is expansion of production on both margins, intensive as well as extensive.

THE RENT OF LAND

Ordinary land has two prices. First there is *rent*, or the price of the use of land. When land is rented, its ownership remains in the hands of the giver of the lease or rent contract. All that passes to the man who takes the lease is the use of the land. Commonly land is rented for a certain period, such as a year or five years. To the owner of the land the rent is income. To the renter it is an expense. The second price is the *capital sum* paid by the buyer to the seller when the ownership of the land is transferred. The seller sells his rights to future income or rent from the land, and the buyer purchases these rights. It is necessary to consider each of these in turn.

The general principles underlying the determination of the rent of land have been discussed in Chapter 12. The enterpriser who uses the land must judge how much product will be lost if the marginal unit of land is withdrawn, just as he must estimate how much he is likely to lose if a unit of labor is withdrawn, or a unit of capital withheld. Competition with other enterprisers who also want the land will make it necessary for him to pay the owner whatever the land appears to be worth in the production process, that is, what-

ever it adds to the product, assuming of course that competition is effective.

We have seen that there are various qualities or grades of land and that some land is so poor that it is valueless. But the better grades will be worth something because they add to the enterpriser's product. Economists have long accepted what is called the *Ricardian theory of rent*, named for David Ricardo, who formulated it at the beginning of the nineteenth century. According to this theory, the interaction of the supply of land and the demand for it determine where the margins, both extensive and intensive, will be. At the extensive margin, land will be free. But because of such factors as fertility and location, all land superior to the marginal land will command a price. Competition between farmers for the better qualities will result in payment to landowners of a rent which represents the superior productivity of the better land. If, for the same cost in capital and labor, a tract of good land produces six bushels more grain than does an equivalent area of the marginal or free land, the rent of this tract will equal the price of six bushels of grain.

The Ricardian theory must be regarded still as a useful first approach to an understanding of rent. However, it requires qualification in certain respects. Like the marginal productivity theory of distribution as a whole, it assumes conditions regarding competition and mobility which frequently are absent, especially in short periods. Leases may be given for periods of years, long enough for substantial changes in the productivity of the land, as measured in money, to take place, even when the money rent remains the same. In the absence of lengthy leases, the money rent may remain unchanged because both parties are unwilling to disturb a rent to which they have become accustomed. Also, neither farmers nor landowners can know with any exactness what the productivity of land is. The profits of

the farming enterprise may be known (although not always), but usually data are absent which would show how far these profits are due to the land and to other factors.

Farm rents in America are often a matter of local custom. Over much of the corn belt, for instance, a fifty per cent share of the grain ordinarily goes to the landowner as rent. Usually a cash rent is paid for grassland, and it is with regard to this cash rent, and with expenditures like those for fertilizer and repairs, that bargaining is likely to take place. From poorer soil the landowner may get a smaller share of the crop, such as two-fifths, but rough adjustments like this cannot allow in more than a general way for differences in land quality.

Probably there is more freedom of competition and greater possibilities of adjustment in capital values than in rents, that is, in the sale prices of farms than in the rents. When farming is prosperous and rents do not fully reflect this prosperity, we can expect many prospective tenants to seek farms. At such a time farms are put on sale by owners, and men who want to operate the farms themselves outbid prospective buyers who wish them for investment purposes and for rental to tenants. This happened in many farming areas during the prosperous period between the two world wars. The same is true of city houses under conditions in which rents remain lower than demand and supply warrant, as when rents are fixed at a low level by a government authority. A scarcity of rental houses was noticeable during and after the Second World War. Houses were for sale and persons who wanted houses for their own occupancy outbid those who wanted property as an investment.

Urban site values

The same principles which determine the value of farm land govern the value of urban sites. The skyscrapers of the large cities of America represent intensive use of valuable

building land, just as the heavier seeding and greater use of labor and machinery found in the best agricultural districts represent intensive cultivation of valuable farm land. The suburb that reaches out into the country corresponds to the margin of cultivation of agricultural land.

In so far as competition exists, urban rents reflect the varying values of the different plots of land as business or home sites. If the population increases so that the demand for land is more intense, the suburbs extend farther and buildings rise higher in the center of the city. If competition causes rents to equate the relative advantages of various tracts, it follows that a city store located outside the high-rent area cannot be expected to sell its goods at prices lower than those of central stores, just as a farmer whose soil is poor cannot sell his produce more cheaply than do farmers with better land. Much of the same kind of impediments to competition and mobility exist in the city and on the farms.

THE SURPLUS ASPECT OF LAND RENT

The Ricardian theory of rent regards rent as being determined by the productivity of the land and not as connected with the cost of producing the land itself. Aside from the improvements which have been added to the land, it is argued that land has no cost of production. What is called rent in ordinary usage covers payment for the land itself and for buildings and other improvements. If allowance is not made for the cost of improvements, they will not be replaced when they wear out and no new improvements will be made. But there is no such necessity for payment for the land itself. Rent for the land itself is a *surplus* in the sense that it is unnecessary. Production would take place without it. Some reformers, impressed with this argument, have gone so far as to advocate transferring through taxation the entire rent of land to the government.

As with the rest of the Ricardian theory, there is a certain amount of truth in this conclusion. Yet qualifications are required. For one thing it would be very difficult, if not impossible in many cases, to ascertain how much of the rent paid for land is attributable to the land itself and how much to the improvements. Improvements such as leveling fields and clearing forests become inseparable from the land itself. Once they have been made they cannot be withdrawn, even if no payment is made for them. The effect of confiscating the value of such improvements would be to deter private individuals from improving further, and the government would have to undertake any further clearing or leveling thought to be desirable. Also considerable injustice would be done by taking away all rent of land. The farmer who recently has purchased a farm from his savings or through a loan to be paid off later would find part of the value of his property confiscated, while the man who sold it to him would lose nothing.

OTHER SURPLUSES

The surplus concept can be applied generally. It is applicable to payments for capital goods and labor, as well as to the rent of land. As we have seen before, in periods too short for any factors of production to be withdrawn, it is not necessary that they be paid for. Only variable costs, that is, those referring to withdrawable factors, must be met. What perhaps is peculiar to land rent is not that it is a surplus, for there are other surpluses, but that the surplus element in land rent has greater lasting power than most other surpluses.

THE CAPITAL VALUE OF LAND

The sale price of land has two constituents—the income or rent, and the rate at which this income is to be capitalized. Thus, if the rent is calculated as a hundred dollars a year,

and this is to be capitalized at five per cent interest, then the capital value of the land is two thousand dollars. Capitalization was discussed in the preceding chapter and rent has been studied in this, so that nothing need be added here.

One or two implications of the theory, however, are worth mentioning. If rent is a surplus in the sense that land cannot be withdrawn, it follows that the rent can be lowered without affecting the supply of land offered in the market. A tax on rents can be imposed, therefore, and the probability is that the landowners will have to bear it themselves.² If the tax is expected to be repeated in other years, it is allowed for in the process of determining the sale price of the land. New buyers pay less for land, sufficiently less to compensate them for paying the tax in future years. Such a tax is said to be *capitalized*.

If benefit payments made to farmers by the government have the effect of increasing the demand for farms, probably they will raise the price of land accordingly, so that purchase prices allow for benefits expected in the future. This means that government subsidies, under suitable conditions, may be capitalized, just as much as taxes on land rent.

The price of minerals

The value of a mine decreases as the ore is removed, and therefore allowance must be made for depletion in calculating the return. The mine is the source of a number of units of revenue, accruing over the life of the mine, and the sale value of the mine will be the present value of these units. The process of fixing a present value for a sum of money to be received in the future is called *discounting* and it involves making whatever allowance is thought appropriate for interest on capital, having regard to the risk of loss and the chance of gain thought to be applicable.

² See Chapter 24 for a discussion on the subject of who bears the burden of a tax.

SUMMARY

Land is of varying quality. How much of it is to be cultivated, and in what degree of intensity, depend on the demand for the products of the land. So far as competition exists, the rent equates differences in quality of land. Actually, competition is not universal and appears to be more effective in governing capital values than rents in some circumstances.

Land rent contains an element of surplus in the sense that its payment is not necessary to stimulate production. For this reason the name rent is given to other surpluses, such as exist over short periods in the returns to labor and capital goods.

Urban site values are influenced by factors similar to those which determine other rents. The sale price of land is the capitalized income and the price of a mine is the discounted value of expected income.

EXERCISE

Ask a real-estate dealer in your locality to tell you the relationship he expects to find between the sale price of an ordinary house in the district and the rent. Can you reconcile the figures you obtain with the rates of interest you noted in the exercises given you at the end of the preceding chapter?

PROBLEMS

1. Some time ago a prominent American reformer advocated a *single tax*, whereby all government expenses were to be met by a confiscatory tax levied on land values. What would you say of such a proposal at the present time?

2. A worker whom you know has been employed in a factory for several years at a wage of \$50.00 a week. The factory closed down and now he is selling shoes at \$25.00 a week.

The only other job available to him at the present time is another salesman's position at \$20.00 a week. He says that he would be unwilling to work at all for less than \$10.00 weekly. Has he a surplus in his present wage? If so, how much? Give reasons for your answers.

3. A furniture company situated outside the main shopping area in your town advertises that its goods are cheaper than those of its competitors, because it pays a lower rent for its store. This does not accord with what is said in the text. What do you think is the explanation?

4. Answer again Question 3 on page 149, following the chapter on price control.

CHAPTER 16

PROFITS

Profits commonly are regarded as the reward of enterprise. Although something has been said already on the subject, a further explanation of enterprise is called for here.

THE NATURE OF ENTERPRISE

Processes involved in enterprise

Enterprise as it is ordinarily understood seems to involve three processes.

First in point of time is the element of *forecasting*. The factors which influence the future of human affairs are numerous and complex, so that no one can forecast the future with accuracy, at least outside a limited sphere and period. Yet, every day in business, arrangements that are more or less important have to be made, which call for assessment of the future. Next, *planning* is necessary. In the light of existing conditions (which include such factors as the enterpriser's obligations and the resources at his disposal) and the judgments reached concerning the future, decisions have to be made and plans prepared. Finally, there is *execution*. The plans have to be carried out. This necessitates securing the services of labor, capital and land, and making whatever arrangements are required for production to take place.

If we should so desire, all these functions could be classified as labor. It might be described as the *labor of management*, in which case profits could be regarded as the *wages of management*, but enterprise appears sufficiently different from labor, as generally understood, and profits from wages,

as the latter term is ordinarily used, to justify separate names and treatment.

The world is too complex for forecasts always to be accurate. Demands may not develop as the enterpriser expected. Factors of production may prove in short supply. Production arrangements may break down or be inefficient because of defective equipment or poor management. Changes in such outside factors as the general price level may upset the whole enterprise. A business venture, therefore, faces the chance of loss. But, on the other hand, there is an opportunity for gain. Not only may forecasts prove accurate and production proceed satisfactorily but it may happen that some favorable development occurs that was unexpected. A farmer decides to put in a new crop, for instance, and the season turns out to be unusually suitable to this particular crop. *Risk-taking* is inseparable from enterprise. But this is not merely a possibility of loss: it is a chance of either loss or gain.

Classes of enterprisers

It may be useful to classify enterprisers into two groups, which for convenience we will call innovators and managers.

In the class of *innovators* we place those businessmen who are trying to discover fields in which the consuming public is likely to demand a commodity at a price in excess of production costs, and who are searching for new markets or for new opportunities for the exploitation of natural resources. *Operators* we may define as those who manage enterprises which already have been started. They combine the factors of production in what they think are the appropriate proportions to secure a finished product, a process which was examined in Chapter 8. The pioneers who settled the plains of America were in the first category; the farmers who cultivated the land in later years may be placed in the second group. In the early days of settlement, some men made a

business of pioneering. They specialized in innovation. They located on a piece of land and started a farming enterprise, only to sell out to later arrivals as soon as they could do so profitably, repeating the process in a newer area. There are men like this in modern business. They specialize in seeking new openings, financing and managing enterprises in their early stages, intending, later, to dispose of them to others who are less venturesome. Those who are sometimes called *promoters* are in this group. There are also specialized operators, such as farmers who purchase farms in order to make a livelihood from cultivating them, or businessmen who buy established enterprises from other people. But enterprisers may pass from one of these categories to the other. Some pioneering farmers settled permanently on the land they occupied, just as certain businessmen in present-day America spend their lives in managing enterprises which they have created. Often the two types are combined in a single concern, as is the case when a business manager searches for new markets for his products or a large concern establishes a research department.

Can enterprise be separated from the other factors of production?

In practice, enterprise is generally associated with another factor or factors of production. The small enterpriser may furnish from his own resources the labor, capital and land which he uses in the productive process. The farmer who owns his farm free of debt and operates it himself without hired labor, exemplifies this situation, as does the mining prospector who sets forth with tools and supplies purchased from his previous earnings. In larger businesses, the enterpriser enters into contracts with those who are able to supply labor, capital and land. He agrees that they should receive payment in priority to his own reward, taking the residue

of business revenue for himself. Sometimes contracts are made under which the owners of the other factors of production participate with the enterpriser in the residual amount, as is the case when executives are given a percentage of profit as an incentive to efficiency or when the owner of a building accepts a rent which is graduated according to sales or profits.

When the enterpriser undertakes to pay to the owners of other factors of production a remuneration which takes priority over his own reward, he is pledging his own income to insure their payment. Even if he does not invest capital in the business, he risks any capital that he owns elsewhere, if he does not protect this by incorporating the enterprise with limited liability.

Only if the owners of the factors of production, whose services the enterpriser wishes to secure, believe that his pledge is worth having, will they agree to accept contracts on such a basis. If the enterpriser can convince them that he has special skill in forecasting, is an able manager, or has considerable capital which he will use to back the business, they will accept his guarantee. But an individual who admits that he possesses no capital and has no intention of giving his services to a business is unlikely to be able to establish himself as an enterpriser. Even the apparent exception, when a government enterprise is set up on the basis of borrowed capital and a staff of workers whose salaries have to be paid from the revenues of the business undertaken, is an exception only at first appearance. It is only because they believe that in the last resort they have a government guarantee of their interest and wages that the owners of capital and labor permit these factors to be employed in the enterprise.

The enterpriser himself is in the position of risking loss since he gives prior charges on the returns of the business to owners of the various productive factors. He risks loss but he

secures a chance of gain. Some of the risks he may be able to pass on to others. Insurance companies offer him protection against a number of risks, such as those of fire, embezzlement by employees or, in some instances, unfavorable weather conditions. Here the enterpriser is substituting a fixed payment, or cost, for an uncertain element of profit. Then he may be able to obtain capital or labor from others on a participating basis. A merchant who borrows money from a friend at a low rate of interest plus a proportion of whatever profit is made by the enterprise, or a corporation which engages an executive on a contract which specifies a fixed salary together with a small percentage of the annual profits are examples of this point.

THE REWARD OF THE ENTERPRISER

Profits defined

Already it has been mentioned¹ that, in economics, the word *profits* is given a meaning different from its general usage. The ordinary definition of profits covers the entire reward received by the enterpriser from his business. When a farmer speaks of his profit, he means the sum which is left over after he has paid the expenses of operating his farm, including payments to owners of labor, capital and land. But evidently this profit includes whatever remuneration he receives for labor, capital and land that he owns himself. If a newspaper report indicates that the profit of a corporation for the past year is a hundred thousand dollars, this means that there is a hundred thousand dollars left for the stockholders after business costs have been met, including bond interest, bondholders being regarded in law as outsiders rather than as members of the corporation.

Economists give profits a more limited meaning. They not

¹ See Chapter 9, page 118.

only exclude wages, interest and rent paid by the enterpriser to outsiders, but they also exclude wages, interest and rent attributable to factors of production owned by the enterpriser himself. Payments of the former type, made to outsiders, they call *explicit* wages, interest and rent, or (from the standpoint of the enterpriser who pays them) *explicit costs*. Remuneration for factors of production owned by the enterpriser himself they refer to as *implicit*.

But from the viewpoint taken in Chapters 8 and 9, this does not go far enough. If there are other essential ingredients in enterprise which have to be paid for if they are to be forthcoming—a question which is studied at some length in the present chapter—then whatever has to be paid to insure their supply must be included also in implicit costs and therefore deducted before profit, in the sense in which this word is used in Chapters 8 and 9, is calculated. Alternatively, payment for such factors as forecasting and risk-taking may be included in profit, but in this case the part of profit which refers to them must be regarded as business cost, from the standpoint of Chapters 8 and 9. Obviously the difference is largely one of nomenclature and need not concern us here.

Methods of calculation

For some purposes, it is necessary to attempt to segregate profit in these other senses from the total represented by profit in its ordinary usage. Thus, when agricultural colleges conduct advisory work in farm management often they attempt segregation. In determining the basis for the segregation, commonly it is asked how much interest the farmer's capital would command in other fields of comparable risk and what wages the farmer's labor would yield elsewhere. A similar question can be put regarding rent of the land, or alternatively the estimated sale price of the farm may be regarded as capital, and interest calculated on this sum.

Another method is to proceed in the opposite manner. Instead of asking how much interest the farmer's capital would bring when invested elsewhere and how much wages his labor would yield when employed in another enterprise, it could be inquired how much interest would have to be paid to obtain capital from other owners and what wages would have to be paid to secure other labor. If the factors of production were completely interchangeable, the two sets of answers would coincide. But they are unlikely to be so in practice and in any case both methods involve estimates, so that perhaps the difference is not important.

To a certain extent, the same method of calculation can be applied to the elements of enterprise itself. The enterpriser who assumes risks against which he can insure is able to ascertain what insurance premiums he would have had to pay if he had insured and thus determine how much of his profit should be regarded as attributable to these particular risks. The businessman who has had an option between engaging an executive on a flat-salary basis or with profit-participation is able to make a similar calculation. But, aside from such situations, the problem of separating profit into its different elements appears insoluble.

Effect of prior charges

If the enterpriser himself provides most of the factors of production and therefore is required to give few prior charges on his earnings to others, his income is likely to have greater stability than when he contributes little of the factors other than enterprise and so has to meet extensive prior charges.

To illustrate this point, we may compare an imaginary farming enterprise under two circumstances. First, we may suppose that the farmer is content to operate a business whose size is no greater than can be handled with the capital and

labor he owns. Second, we may assume that the business is expanded on the basis of borrowed capital and hired labor. In the first case, we may assume a return of two thousand dollars in an average year, fluctuating from one thousand to three thousand according to the season. With additional capital and labor in amounts which cost fifteen hundred dollars each, the average return is six thousand, ranging from three thousand in the worst year to nine thousand in the best. Table 20 indicates the position.

TABLE 20. EFFECT OF PRIOR CHARGES, 1

Case 1. Small enterprise operated with farmer's own capital and labor

	Average year \$	Best year \$	Worst year \$
Total returns	2,000	3,000	1,000

Case 2. Larger enterprise operated with aid of borrowed capital and hired labor

	Average year \$	Best year \$	Worst year \$
Total returns	6,000	9,000	3,000
Wages	1,500	1,500	1,500
Interest	1,500	1,500	1,500
Profit	3,000	6,000	0

The effect of expanding the size of the enterprise by purchasing additional factors of production and giving their owners a prior charge on revenue in payment evidently renders the farmer's own return much more unstable. His profit is very high in the best year but no profit is obtained in the worst one.

The same point can be made by considering the fortunes of two corporations, which are alike in all respects other than capital structure. One has a capital of three million dollars,

provided by common stockholders. The other has a three-million-dollar capital, divided equally among five per cent bonds, six per cent preferred stock and common stock. We will imagine each corporation to obtain a total return varying from two per cent of its capital in the poorest year to twelve per cent in the best season, with an average of seven per cent. Table 21 shows the results in the two cases.

TABLE 21. EFFECT OF PRIOR CHARGES, 2

Case 1. All capital in form of common stock

	Average year \$	Best year \$	Worst year \$
Total returns	210,000	360,000	60,000
Percentage on common stock	7%	12%	2%

Case 2. Capital divided between bonds, preferred stock and common stock

	Average year \$	Best year \$	Worst year \$
Total returns	210,000	360,000	60,000
Required to pay bond interest	50,000	50,000	50,000
Balance remaining for preferred and common stock	160,000	310,000	10,000
Required to pay preferred stock dividend	60,000	60,000	60,000
Balance remaining for common stock	100,000	250,000	50,000 deficit
Percentage on common stock	10%	25%	5% deficit

The effect of the heavy prior charges in Case 2 is to make the percentage return on the common stock much more unstable than in Case 1. There are higher returns in the best year but a deficit is experienced in the worst one. It would be untrue to say that profits fluctuate more in the second case than the first, if the word profits is given the economist's meaning. The situation is explained by the fact that the returns in the first case include more of the relative stable item, interest, than in the second one.

We can see now why it is that subsistence farmers on low-grade land often survive depressions better than do the large commercial farmers who are located on superior soil. The subsistence farmers own their own land and hire little labor or capital. Their outgo is small. Although their total returns fall off during a depression, as do those of the larger farmers, still they manage to make ends meet because they have no prior charges or only a small amount. On the other hand, the large farmers of the better-land districts commonly have heavy mortgages and therefore have considerable interest to pay. They have large wage bills, which also are a prior charge on the returns from their farming enterprises. They may be in debt for machinery. In consequence, when their returns decline during a depression, they may be unable to meet these charges. They suffer losses and, if their reserves are insufficient, they may lose their farms, because the mortgage-holders foreclose and take possession of the property. This occurred on a large scale in the best agricultural districts in America during the depression of the early 1930's, whereas there was more stability in the subsistence farming areas.

The same situation arises in other industries. Enterprisers like the American Telephone and Telegraph Company and the Norfolk and Western Railway Company have proved themselves very stable investments partly because their revenues are relatively steady but also because their finance

is what the investment world calls *conservative*, that is to say, a large proportion of the capital is represented by common stock. Many electricity companies have operated under conditions in which revenues are at least as steady as those of these two enterprises but they have had more bonds and preferred stock in proportion to the common stock. In the depression of the 1930's, therefore, the earnings on the common stock of such companies fell to the vanishing point and in some cases were converted into losses. Some electricity-producing enterprises were foreclosed by their bondholders, because the bond interest remained unpaid. The result was that the common stockholders lost their investment.

THE SOURCES OF PROFITS

We can leave aside for the present the question of whether, on an average, there are any profits from enterprise after the elements which are essential to the productive process have been remunerated sufficiently to insure that they will be forthcoming. It is clear that in particular cases not only do profits exist in this sense but they may be very large. What is the explanation?

Let us examine the sources from which enterprisers derive their income, apart from any land, capital and labor of the ordinary kind that they contribute to the business in which they are engaged.

Successful forecasting and management

Often the forecasts which are made by enterprisers prove correct and in some instances the results are highly remunerative. The profits obtained by successful long-term forecasts of public demand or of supply conditions may be considerable. The same is true of forecasts relating to the business cycle, which has a strong influence on business profits. A merchant who decided that it was a good time to reduce his

inventory before the slump of the early 1930's, or to increase his inventory substantially at the bottom of the depression in 1932, probably made large profits. The same is true of a real-estate speculator who has estimated correctly the extent and direction of the expansion of a city. But it has to be remembered that forecasts may prove incorrect, also, and that correspondingly heavy losses accompany mistakes.

It is not enough to be able to make intelligent forecasts. The capacity to translate them into workable schemes is no less important. The city authorities of a particular area may feel that it is declining in prosperity but, if they cannot think what to do about it, the forecast itself, however correct, is of little value.

Then, in the case of an enterprise which involves continuous operation on a large scale for a period of time, executive ability is requisite to success. A capable manager, with no other outstanding qualities, may do very well in an established business. Inefficient management may result in heavy losses in ventures which are in themselves well chosen.

The windfall element

Next may be mentioned the fortuitous element. Enterprises may fail or succeed for reasons in which the enterpriser himself has no part. A farmer becomes rich because oil whose existence he did not suspect is discovered on his land. A merchant makes money because goods, which he acquired for no better reason than that he was unable to resist the blandishments of a salesman, prove precious as the result of an unexpected failure in supply. The element of chance may operate in the reverse direction also, as in the case of a mining prospector who, correctly surmising that there is ore in a certain neighborhood, stakes a claim which through a geological fault contains none of the ore body.

Monopoly situations

Profits may be due to monopoly of various kinds. A patent (which gives its owner exclusive rights of manufacture for a term of years) may prove very profitable, as may the copyright of a book or play. Moreover, the incorporation of minor improvements, which themselves are patented or copyrighted, may enable the owner to maintain his monopolistic position beyond the original legal life. A franchise or right to operate a public utility in an area where the regulatory authority is lenient to the operators may confer on its owners considerable profit-making power. Then consumer preferences, built up on advertising, may yield profits for some time.

It may be of interest in this connection to mention that accountants, when called upon to value rights of this kind, commonly estimate their value on the assumption that the power to make profits in excess of ordinary interest rates (which they call *goodwill*) will continue only for a relatively small number of years. Some accountants indeed take the view that the higher the excess profits are proportionally, the shorter the time which they can be expected to last, because competition is attracted by unduly high profits or government regulation is encouraged.

The risk factor ²

Certain economists have regarded profits, in part at least, as payment for the assumption of risk. It is argued that risks have to be taken in our changing economy and it is assumed that people have to be paid for taking them, otherwise they would not do so. It must be granted that risks have to be taken in our economy but it is not clear that people, as a whole, require remuneration for assuming them. Adam Smith, in his

² Some economists draw a distinction between what they call *uncertainty* and *risk*. The term risk as used in this chapter includes uncertainty.

Wealth of Nations, said the opposite. Far from stating that risk-taking must be paid for if it were to be forthcoming, he commented that many men overvalued their chances of success in speculative ventures and therefore engaged in them notwithstanding the fact that it was apparent that the average returns would be low. Evidently, this is true today to some extent, otherwise betting would not be popular despite the circumstance that winnings fall short of losses by the amount which is necessary to support those employed in betting businesses. On the other hand, there are some individuals who value security so highly that they will accept positions at very low wages in industries which they regard as safe.

The fact that people are willing to pay premiums to insurance companies to assume on their behalf such risks as those of fire and automobile accident is enlightening, because those who buy policies know that it costs money to run the companies and therefore that the premiums on the average are in excess of the benefits. On the other hand, such evidence as the writer has been able to examine does not support in any very definite way the conclusion that investors in risky businesses receive any higher returns than those in enterprises which are more secure.

In interpreting the effect of risk of men's willingness to become enterprisers, regard must be given to the nature and extent of the risk. One kind or degree of risk may be attractive while another is a strong deterrent. Anyone familiar with the panic-stricken movements of goods and money which take place under conditions of great political or economic risk cannot accept a general statement that people are indifferent to risk, still less that they enjoy it. Much depends on what the people are accustomed to face. They may accept great risks with little thought, as they do when they follow a chance tip on stock-market prices, while they resolutely oppose taking risks of another kind.

Managerial profits

Where management consumes considerable time on the part of the manager, it may be assumed that it has to be remunerated. Here and there we find an individual who is willing to give his services for nothing, because he likes the job and is supported from other sources, but such people are exceptional and almost certainly are insufficient to supply the demand for managerial service.

As the time the enterpriser has to give to managerial activities becomes smaller relative to other contributions which he makes to the business, such as furnishing manual labor, this aspect may become less important. Probably a number of individuals enjoy being their own masters so much that they are willing to accept rewards as enterprisers which are lower than their labor would command in another occupation. These men receive no remuneration for management as such. In fact their *wages of management* are less than nothing because, on the basis of calculation which has been described earlier in the chapter, the wages of their ordinary labor more than accounts for their entire income as enterprisers. To these men, the time which they spend outside ordinary working hours in planning their operations and the anxieties which they experience are compensated by the freedom which they enjoy in other directions, regardless of a lack of monetary remuneration. Such industries as farming appear to attract many individuals of this kind. Probably numerous men who are engaged in other businesses on their own account prefer to be enterprisers rather than to accept positions as employees, because of such factors as personal independence and prestige. But there are those who feel differently in the matter and, as with the risk factor, the evidence is inadequate as to whether or not an average managerial return which is positive (that is, a profit as distinct from a loss)

exists in some fields. In agriculture, for instance, the data obtained by agricultural economists shows that in many areas farmers receive lower incomes than do the more poorly paid groups of city workers, despite the fact that the farmers furnish a certain amount of capital as well as their labor to the businesses which they operate. But how far such factors as desire for country life, joy found in ordinary farming operations, and lack of opportunities to move away, as well as the satisfaction which they get from being their own managers, contribute to their willingness to accept these low incomes cannot be ascertained.

DOES THE ENTERPRISER NECESSARILY RECEIVE THE RESIDUAL PROFIT?

In general, we think of an enterpriser receiving whatever residue remains from business income, after the owners of other factors have secured their contractual remuneration and the enterpriser has himself obtained payment for productive elements which he contributes.

But it must be remembered that where there is immobility of the factors of production the remuneration is a matter for bargaining and an enterpriser whose capital and skill is tied up irrevocably in a business is not in a strong bargaining position. Only if he has the power to withdraw his contribution or to substitute other factors for those concerning whose remuneration he is bargaining, is he in a position to retain a residual income for himself. Thus, a prospector may have discovered an ore deposit and developed a very profitable mine. So long as he is in a position to substitute one body of workers for another he will be able to secure labor at competitive wages and the abnormal returns from the mine will go into his own pockets. But if all prospective workers

form an effective combination, they may be able to force up wages considerably at the expense of the enterpriser's profits. Evidently what happens in this event is that the workers obtain some of what otherwise would form the residual returns.

It is not uncommon in the retail trade for a storekeeper to build up a profitable connection with customers, only to find that in due course his landlord raises the rent so high as to absorb a substantial part of the returns. The store-owner is able to do this because the customers of the store become attached to the location as well as to the storekeeper and some of them will continue to buy their goods there even if this particular storekeeper moves away.

Windfall and monopoly profits frequently become targets for taxation. Their recipient is unable to escape a tax levied on them by withdrawing from production, without losing his income altogether. So long as the tax is less than the full amount of the income that is taxable, it is more profitable for the enterpriser to pay the tax than to try to avoid it. In this case, the government absorbs a portion of the residual income corresponding to the amount of the tax. The heavy taxes which were imposed by some governments on the profits of gold mines, after the price of gold was increased by the currency devaluations of the 1930's, afford a good example of a tax on windfall profits.

ARE PROFITS NECESSARY?

The discussion in this chapter places us in a position to say something concerning the statement, commonly met in popular discussion, that profits are unnecessary and can be abolished.

In earlier chapters we have learned that in an exchange economy any factor of production must be paid for if the quantity of it obtainable free of charge is inadequate to

satisfy the demand. This is just as true of enterprise as it is of labor, capital and land. The enterpriser contributes certain essential elements to the productive process, such as forecasting, planning and executive direction, together with an assumption of risk which makes it possible for the owners of other factors to receive their rewards as prior charges on the revenues from the sale of the products. Each of these elements has to be paid for if, and *only* if, the supply of it forthcoming without payment is insufficient to meet the demand.

Obviously, some of these elements are so closely akin to labor that it is not unreasonable to regard them as a species of labor, and the term *labor of management* has been coined accordingly, with its correlative, *wages of management*, as has been mentioned. Risk-taking also has been emphasized by some economists as an element of enterprise. How far management and risk-taking have to be remunerated, if these services—admittedly essential—are to be forthcoming, is something which has been considered earlier in the present chapter. But it is clear that services which are essential, and yet are scarce in relation to the demand, have to be paid for, regardless of whether they are furnished by outsiders or by the enterpriser himself. In other words, they are explicit and implicit costs, not part of residual profit.

Residual profit may be regarded as unnecessary for the maintenance of production, because production would take place without it. It is the explicit and implicit costs which are required to call forth the supply of the factors of production. The residual profit is something which is over and above these costs. But it has an important function in a dynamic economy. *It is the possibility of receiving residual gains that attracts enterprisers into an industry, just as the likelihood of residual losses repels them.* Residual gains are the main incentive in private enterprise. It is the chance of mak-

ing such gains which causes enterprisers to be on the watch for productive opportunities of all kinds, as indeed this chance causes them to engage in monopolistic or other practices injurious to the public welfare.

In a dynamic economy, *residual gains and losses tend to disappear*. Gains cause production to be expanded, relative to the demand, by existing enterprisers extending their operations and by new enterprisers entering the successful industry. The price of the product falls, in consequence, and profits diminish. On the other hand, residual losses cause contraction. Enterprisers produce smaller quantities of the product relative to the demand, and some of them leave the industry. The lessened supply raises the price of the product and losses become smaller.

But in a changing world *the phenomenon of residual gains and losses remains*, because as one profitable situation runs its course or an unprofitable one disappears, new ones emerge elsewhere, only to meet the same fate in their turn. Whether, on the average, residual gains and losses compensate each other is something which remains unknown for lack of data. But enterprisers are less concerned with averages than with their own prospects and experiences, so that the absence of knowledge on this subject is not very important.

SUMMARY

Enterprisers contribute certain essential elements to the productive process and their profits may be regarded as remuneration for these to some extent. But windfalls and monopoly gains are important.

Enterprisers are not always in a position to retain for themselves the additional returns which result from successful ventures. Whether risk-taking requires to be paid for in the form of higher returns to those who enter risky businesses is

not altogether clear, because enterprisers react differently to risks of various kinds. In some degree, this is true of managerial activities also.

If profits are so defined as to exclude remuneration for productive elements which have to be paid for, in the long run individually (whether positive or negative) they tend to disappear. But the phenomenon of profit remains because new profit situations emerge. Whether in fact residual gains and losses compensate each other, on the average, cannot be ascertained.

EXERCISES

1. If "Moody's" is available in a convenient library (see Chapter 8, Exercise 2), compare the profits of a steel company (such as United States Steel Corporation) with a chewing-gum company (such as American Chicle Company), each being expressed as a percentage of the capital. How do you explain any difference which you notice in the percentages calculated? (To obtain the capital for this purpose, add common and preferred stocks, surplus and bonds, if any. To obtain profits, add bond interest, if any.)

2. If an investment dealer is available locally, ask him if he can show you a copy of an investment trust's report. Calculate the profit as a percentage on capital, as in Exercise 1. Compare the percentage with those obtained in Exercise 1. The return on the capital of an investment trust averages the returns on the individual corporations whose stock is owned by the trust, the trust's operating costs being deducted.

3. From "Moody's" or elsewhere, obtain a copy of a fire insurance company's report. Probably this classifies claims and other expenses separately. Compare the two amounts with the premium income. What do you think of the cost of insuring against the risk of fire?

money. The metal was deposited in a safe place and in its stead was circulated a deposit receipt or other paper document which represented the metal and was convertible into it on demand. Since commonly the paper took the form of what in law is called a *promissory note*,² paper money came to be called *notes*.

Paper money is extremely convenient for larger values. It possesses little weight and can be folded into small compass. Larger sums can be represented by merely changing the engraved inscription which appears on the paper. If the full value of the metal represented is kept in storage, then paper money is not cheap. In addition to the cost of the metal itself the expense of printing the notes has to be incurred. The smaller the value the more costly the notes because paper which is circulated quickly and carelessly gets soiled and torn and therefore requires frequent replacement.

But very early bankers and others who had issued paper notes found that it was unnecessary to keep in storage the full amount of metal represented by the notes issued. Because of their convenience, the notes remained in circulation and it was necessary to keep in storage only sufficient metal to ensure the convertibility of the small proportion of the notes likely to be presented for payment. Paper money was much cheaper than a coin circulation on this basis. The material itself was cheap and the printing was inexpensive, especially for notes of higher denominations. Consequently banks tried to circulate as many notes as possible and abuses resulted. Counterfeiting was very profitable also and caused considerable trouble, but improved techniques have made counterfeited notes easier to detect.

The various monetary standards must now be considered in greater detail.

² See page 259 (note) for definition.

THE GOLD STANDARD

The gold standard no longer exists in its old form but it has been of considerable importance in the past and may become so again in the future. A country is said to be on the gold standard when the money which is full legal tender (that is, authorized by law for debtors to offer and creditors to accept in payments of debts of any amount) is *composed of, or exchangeable for*, a stated amount of gold. The gold represented by a unit of currency is stated in weight and fineness or purity. Prior to 1933, the American dollar contained 25.8 grains of gold that was nine-tenths fine, equivalent to 23.22 grains of pure gold. Under the gold standard there are no restrictions regarding the use of gold. Not only may gold bullion be offered for coinage in unlimited amounts if gold coins circulate, or be offered in exchange for convertible paper money if gold itself is not circulated, but it may be used in industry or exported if desired. Unrestricted conversion of gold into money and of money into gold at a fixed ratio, together with unrestricted import and export of the metal, are the chief characteristics of the gold standard.

There are three forms of this standard:

(1) *The full gold standard* has gold itself in circulation. Gold coins are used as money. It is a costly monetary system, but despite the cost America, England and some other countries formerly had the full gold standard.

(2) *The gold bullion standard* does not put gold itself in circulation. Coins of cheaper metal and paper notes are used but they are exchangeable for gold bullion at a fixed ratio. England had a gold bullion standard from 1925 to 1931 and her standard bar of gold was four hundred ounces in weight. Sixteen hundred pounds (about \$8,000 at the then existing rate of exchange) was the equivalent of one of these gold

bars, that is, on demand, a bar of gold was given in exchange for notes worth this amount, or notes for this sum were issued to whoever presented a bar of gold.

Under such a system convertibility of paper money into gold is requested only when the metal is required in large amounts for industrial uses or for export and therefore a relatively small amount of gold is sufficient to back the currency. Hence the system is much cheaper than a full gold standard. This is why England adopted the gold bullion standard in 1925. It would have been very costly for England at that time to acquire from abroad sufficient gold for ordinary circulation.

(3) *The gold exchange standard* does not provide for the local exchange of the metal for notes but the local money is exchangeable at a fixed rate for some foreign money which is itself exchangeable for gold. At one time the Indian rupee was on this form of the gold standard. Fifteen rupees were exchangeable for a British pound, which was itself exchangeable for just over 113 grains of gold. Under such a system it was unnecessary for the government of India to keep any gold whatever in that country, provided only it had a sufficient reserve in London. Obviously this system also is cheaper than a full gold standard.

The working of a gold standard

Under suitable conditions a gold standard works *automatically*. The level of prices in the gold standard area is determined ultimately by the supply of gold in the area in relation to the demand for it. If this area means the commercial world, as it did in the latter part of the nineteenth and early twentieth centuries, then we can speak of the general level of prices in the commercial world as being determined by the supply of and demand for gold.

The cost of mining gold exerts a stabilizing influence on

the price level. How this operates may be seen if we consider what happens when the price level falls or rises. If the price level declines, mining costs fall also. The price of gold remains as before, because an ounce of gold continues to exchange for the same amount of currency. Hence mining becomes more profitable. The output of the mines increases, causing more gold to go into circulation or into bank reserves. In consequence the price level increases. If the price level rises, on the other hand, the costs of mining advance also; the profits from mining decline and the output of the mines lessens. Gold tends to become scarce and prices tend to fall.

Although this relationship is helpful in bringing price stabilization, it is in itself insufficient to keep prices steady. The current output of the mines, which alone is affected by the price change, is only a small percentage of the existing stock of gold, and it takes a number of years for an alteration in gold production to make much difference to the price level. Complete cessation of mining does not reduce gold stocks and it is only as these are absorbed into industry or find their way into the hoards of backward countries that the gold available is lessened.

Aside from this stabilizing influence, the international gold standard tends to maintain a constant relationship between prices in the various gold standard countries. There tends to be a world price level or rather (since prices necessarily differ somewhat from one locality to another because of such factors as transportation costs) there tends to be a world hierarchy of prices.

If the gold supply increases because of the discovery of new deposits or the adoption of improved techniques of mining or extraction, the price level of the country obtaining the additional gold will rise. Either the increased amount of gold passes into circulation as coins or goes into bank reserves, in which case notes will be issued against it or bank

deposits will be created with the gold as a basis.³ In any case there is more money and more spending, and prices rise. When prices have risen in the area first affected, its local goods become dearer in comparison with goods from other places. Imports of goods to the area with more gold will increase and exports of goods from this area will decrease. There will be a surplus of imports, for which gold must be shipped in payment. This movement of gold to other areas will raise the price level in the areas to which it goes, and the process will continue so long as prices in the various areas are not in keeping with each other. Conversely, if gold becomes scarce because population and trade increase without a corresponding rise in the gold stock, prices in the area first affected by the scarcity will fall. Low prices there will stimulate exports of goods from the affected area and decrease imports to it. Gold will flow to it, causing a scarcity elsewhere. Thus, a gold standard of this kind tends to keep price levels in proper relationship with each other throughout the entire area which has such a standard.

The foregoing description presupposes that there is no interference with the adjusting forces. If the monetary authority in a country exporting gold does not contract the currency but instead (for example) reduces the quantity of gold represented by the monetary unit, there is no reason for prices to fall. Similarly, if, when a country receives imports of gold, it *sterilizes*⁴ the metal by preventing it from affecting the volume of money, then prices will not rise. The gold standard will not work satisfactorily under these conditions. This was the situation between the two world wars. The leading commercial countries adopted the practice of

³ The creation of bank deposits is explained in Chapter 18.

⁴ The government may borrow from its citizens the money with which to purchase the gold, selling bonds to buy the gold. The government issues money in exchange for the gold but it receives back the same amount in payment for the bonds, so that the same quantity of money remains in circulation as before.

managing their money in such a manner that the volumes of currency in issue did not depend on the amount of gold they held. The United States imported large quantities of gold without raising the American price level proportionately. In the 1920's, the imports of gold came into this country primarily because there was a surplus of goods exports over imports. Had American prices been permitted to rise, the dearth of goods in this country would have reduced exports and increased imports, bringing to an end the export surplus and the inflow of gold for which it was responsible. But in the absence of higher prices in the United States the export surplus and the inflow of gold continued, draining foreign countries of their gold supplies. Further, the countries exporting gold did not always allow their price levels to fall accordingly. A falling price level is unpopular because, if the fall is rapid, it usually is accompanied by severe unemployment.⁵ The governments of foreign countries therefore preferred to abandon the gold standard rather than continue in such a condition. This term, *abandoning the gold standard*, or *going off gold*, means that the currency is declared to be no longer convertible into gold at a fixed ratio. In 1933 the United States herself finally went off gold, and in 1934 a new dollar value was fixed for gold. Where formerly an ounce of gold had been convertible into \$20.67, it now became equivalent to \$35.00. Such a step is called *devaluation*.

Under these conditions the gold standard had lost much of its meaning. No longer did it ensure that prices remain in line in the various countries and there was no assurance that the cost of mining gold would operate as a check against an indefinite price rise. If an ounce of gold could be made equivalent to \$35.00, it could be made equal to \$350.00, to \$3,500.00, or any other sum. Gold was no longer a firm anchor

⁵ See Chapter 21.

for the monetary system. It had become a changeable backing for a paper currency.

SILVER AS A STANDARD

Silver has been important in monetary history. It was the principal money in Europe during the Middle Ages, although some gold coins were circulated. At that time commodity prices were lower than they are today and silver coins of ordinary size were convenient for most transactions. This was very important in that period because paper money had not come into use.

Sometimes silver has circulated along with gold or paper as part of a system of parallel standards or in the form of bi-metallism, both of which are described later in this chapter. In some instances silver forms a part of the monetary reserves. A law passed in the United States in 1934 established the objective of having silver form one-fourth of this country's monetary reserves but although subsequently a large quantity of silver was purchased this objective was not achieved.

PARALLEL STANDARDS

Sometimes two or more moneys circulate together, prices being expressed in each of them independently. Many years ago this was true of silver and gold in England. The chief silver coin was the shilling and the gold coin was the guinea, and the number of shillings to the guinea varied.⁶ Chinese silver coins and British and American gold coins (or paper money convertible into gold coins) circulated independently in foreign trade in East Asia for many years. Chinese paper currency and American dollars were both used in China during the Second World War. The American dollar and the

⁶ Later the guinea was fixed at twenty-one shillings and, although the guinea is no longer coined, the name is used still for twenty-one shillings.

British pound were used extensively in Europe along with other currencies after the first world war. A system of this kind may be described as one of *parallel* standards. The essential feature is that the value of each money is fixed independently and yet all are used in circulation together.

Such a system is found where no government monopolizes coining or money-manufacture. Frequently it exists where confidence in the local money has been lost because of over-issue and consequent price inflation,⁷ causing people to prefer to use money which they consider more trustworthy. China during the Second World War is an example.

BIMETALLISM

A bimetallic system has two standard moneys. Both are legal tender to any amount and their values are kept at a fixed ratio. Unlimited exchange of both metals for currency is allowed. The United States had bimetallism around 1800. The dollar was supposed to contain 24.75 grains of gold or 371.25 grains of silver, so that the ratio was fifteen of silver to one of gold. A number of other countries have had bimetallic systems at various times.

At first sight bimetallism seems sensible if gold and silver are to be used as money; but it has been given up because it proved impossible to maintain a fixed ratio in the values of two metals whose production conditions are different. In the latter part of the nineteenth century, a great expansion in silver production took place. The mints of the bimetallic countries were the most profitable market for this silver. Silver flowed into them and gold flowed abroad to pay for the silver. Had bimetallism not been abandoned, soon gold would have disappeared from the monetary systems of these countries and they would have been left with silver standards.

⁷ The word *inflation* is used to denote a condition in which so much money has been issued that prices have risen considerably. See Chapter 20.

Gresham's law

The above is an example of the working of what is called Gresham's law.⁸ This law is commonly stated as "bad money drives out good." What it means is that a money material which is overvalued by a country's law and therefore finds its most profitable use as currency tends to circulate as money, while a material which is undervalued by the country's law disappears from circulation, being used more profitably in other ways. Gresham's law was formulated originally to explain why, under conditions in which the existing coins were clipped and worn, newly-minted coins were exported to foreign countries, while the old lightweight money remained in circulation. The operation of this law has been seen in modern times. After the gold standard was abandoned and the paper currency became inflated in some foreign countries, people began to sell gold coins or hoard them, so that soon no gold remained in circulation. Undoubtedly this is what would have happened in the United States in 1933 and 1934 if the government itself had not withdrawn gold from circulation.

PAPER STANDARDS

Sometimes paper money is described as *representative* money when it is backed fully by metal and can be converted into this metal on the demand of the holder. *Standard* paper money is itself the standard. Again the term *convertible* is used to describe paper which can be exchanged into metal at the will of the holder, as opposed to *inconvertible* paper money whose holder is given no right of convertibility into metal.

Prior to 1933 the Federal Reserve notes (the ordinary bills of five dollars and upward that circulate in this country)

⁸ The law gets its name from Sir Thomas Gresham, an Englishman who lived in the sixteenth century and who was thought, incorrectly, to have formulated it.

were convertible into gold. The silver certificates (the usual dollar bills) are convertible into silver. The so-called *greenbacks*, or United States notes, were issued during the Civil War as inconvertible paper and since 1933 the Federal Reserve notes have been inconvertible.⁹

As standard money, paper money differs from gold in that the cost of producing it places virtually no limitation on the quantity which can be issued. Not only is the material cheap, but one dollar can be made into ten, a hundred or a thousand by the simple process of engraving the note differently. The result is that in times of financial difficulty governments frequently issue so many notes that prices rise to very high levels. In a mild way this occurred in the United States during the Civil War and in a different manner during both world wars. In some countries the process has been carried so far as to render the currency practically worthless, as in Germany in 1923 when millions of marks had to be paid for a bus ride or a loaf of bread. During the Second World War Greece and China exemplified the same situation.

In the past, reliance has been placed on the convertibility of the paper money into gold to prevent overissue. The issuing authority could put out no more notes than could be kept convertible by the gold it held. This is why such provisions were made as that included in the law regulating the issue of Federal Reserve notes, which are required to have a stated percentage of gold behind them. The insecurity of this

⁹ Of a total amounting to 28,515 million dollars of American currency in circulation on December 31, 1945. Federal Reserve notes accounted for 24,388 million dollars. There were 1,873 million dollars in silver certificates and 316 million dollars in United States notes. Metal coins totalled 1,275 million dollars.

Although the Federal Reserve notes have been inconvertible into gold for ordinary purposes, the Treasury has made gold available at a fixed price in dollars for export and dollars have been exchanged at a fixed rate for gold imported. But these transactions have been subjected to a certain amount of control. Perhaps the best description of the American monetary system in the period after 1933 is to call it a "restricted gold bullion standard."

arrangement was seen in 1934, however, when the United States government raised the dollar value of gold by about seventy per cent. An ounce of gold had previously represented between twenty and twenty-one dollars and now it was made equal to thirty-five dollars. And the process could go much further, as has been pointed out.

Just as mere convertibility as such is insufficient to protect the currency against overissue, so rendering the money inconvertible does not remove all checks to overissue. Although now inconvertible, the Federal Reserve notes require to have twenty-five per cent of gold behind them. Now the gold is kept by the Treasury and not by the reserve banks themselves, as was formerly the case. So long as such a requirement continues, it limits the quantity of notes that can be issued.

Another way of limiting the quantity of notes is for a maximum amount to be prescribed by law. This course was followed with the greenbacks or United States notes. No great reliance can be placed on a limitation of this kind, however, because the government can increase the limit very easily. This is what has happened in England during recent years, the note issue limit in 1915 being about five times what it was in 1928, when it was first imposed in its present form.

In the absence of more formal limitations, only the forbearance of the issuing authority limits the quantity of notes issued. The quantity of notes in circulation in relation to the demand existing for them governs their value, as is explained in Chapter 20. History furnishes many examples of paper currencies which have become inflated in greater or less degree.

SUBSIDIARY MONEY

Money which circulates because it represents a fractional part of the standard money is called *subsidiary* or *token* money. In America, the dime and quarter are described as

subsidiary silver, the nickel as a token coin. Generally the metal in such coins is worth much less than their face value, the difference being called *seigniorage*.¹⁰ Since the seigniorage usually is far greater than the cost to the government of minting the coins, the government makes a profit on the coinage.

Metal money is more convenient than paper for small denominations and is more economical, in spite of the cheapness of paper as a material, because it needs to be renewed only at long intervals, whereas low-value paper would require frequent replacement.

When there is inflation of the standard money and prices rise substantially, the metal value of the subsidiary coins is apt to become greater than their face value. In such a case the coins may be melted and metal used for other purposes. Not only are harsh laws passed to punish those who do this, but commonly the coins are debased further, that is, are made of still cheaper metal. If prices rise to very high levels, as has sometimes been the case, even this is insufficient. The metal coins are hoarded, or they may be circulated openly or in a black market along with the other money as a parallel standard.

INVASION AND OCCUPATION CURRENCY

Currency conditions in an invaded country are apt to be chaotic. Metal money of any kind maintains a certain standing because its value cannot fall below that of the metal it contains. The currency of the defeated country may become valueless, unless there are hopes of its reinstatement, in which case probably it will be hoarded. Or it may be taken over at a low value by the new government. The invading government is likely to issue new paper money and sometimes those

¹⁰ Given this name because formerly coinage was the privilege of the lord or seignior.

who have experience in such conditions are puzzled as to the meaning of this currency.

Initially this money is spent on supplies purchased by the invading army. Who really pays for these supplies? If the invasion currency is later retired by redeeming it in gold or goods, then the government which retires it pays the ultimate cost. If, on the other hand, the currency is not retired and remains in circulation, or is replaced by new paper, the burden is passed from one to another of the people who continue to use the money. They have parted with their goods in exchange for the currency. True, they gave other goods in exchange for the currency of the former government and suffered if this former money lost its value, but this does not affect the situation in which they are placed in relation to the new money. In the case of the currency spent in Italy by the invading American army, American gold or goods would have to be paid for it if later the American government were to take it over. On the other hand, if the new Italian government were to assume responsibility for the money, the burden would remain on the people of Italy, who have given goods in exchange for the currency in the first instance.

SUMMARY

Money usually is said to have four functions. It acts as a means of exchange, a measure of value, a standard of deferred payments and a store of value. Certain qualities are required if these functions are to be performed satisfactorily.

Historically, the precious metals commonly have furnished the main monetary materials. The gold standard in its automatic and managed forms, silver, bimetallism, parallel standards, paper standards and subsidiary money are considered. In recent years paper money has been the chief circulatory medium, with gold playing a varying part in checking over-issue. Invasion and occupation currency are discussed briefly.

EXERCISES

1. Take your money out of your pocket or purse and examine it. Read what is printed on the various notes.
2. Examine any foreign money to which you have access.
3. You may have traveled in a foreign country. Apply what you have learned in this chapter to the money you saw or used abroad. Ask your instructor to explain anything which you do not understand.

PROBLEMS

1. Four functions of money are mentioned at the beginning of the chapter. Do you think that the American dollar has performed these functions satisfactorily? If not, where has it been unsatisfactory? You will be asked to answer this question again after you have read Chapter 20.
2. Which of the following monetary standards would you advocate for America: (a) a gold standard with gold in circulation, (b) a gold standard with inconvertible notes in circulation, or (c) an inconvertible paper standard? Why?

CHAPTER 18

COMMERCIAL AND OTHER BANKS

It would be very inconvenient if a person had to carry about with him all the money which he needed to meet the payments he had to make, not to say unsafe in view of the risk of loss or theft. The same objections apply to hoarding money for future requirements. Loans would be difficult to arrange, if the borrower had to seek out those who had money available. Banks are institutions which have been developed to do these things.

As will be seen later, the banks are specialized to some extent. Those of the common type, which are called *commercial banks*, perform two broad functions. First, they act as transfer agents, holding deposits on behalf of customers and transferring these to others as requested, and collecting transfers to their depositors as well. Second, they are dealers in capital. They accept funds from those who do not want to use them at present but wish them to be available later, and grant loans to others who desire to spend money at once which they expect to be able to repay at a subsequent date.

THE TRANSFER PROCESS

Most payments of considerable size and innumerable small ones are made through the agency of banks, and the bank check is a familiar document. The check is a written order to a banker to transfer to someone funds from the deposit of the person whose signature it bears. Whether or not it is to be regarded as money depends on the precise definition which is given to the word *money*. But certainly a bank check can in no case be legal tender money. A check is not necessarily good since the bank on which it is drawn may have closed

down or be unable to pay, the individual whose funds it is supposed to transfer may have no money in the bank, and the check itself may be a forgery, that is, the signature on it may not be genuine. Therefore, care must be exercised in accepting checks and ordinarily they should be accepted only from individuals who are known and are regarded with confidence.

When a check is given, the recipient may take it to the payer's bank and, if he does so, after identifying him the bank will give him the money. More usually, however, the receiver takes it to his own bank for collection. If the payer also is a customer of this bank, the transfer is made simply by taking the proper amount from the payer's account in the bank's books and placing it in the account of the recipient. But, if the payer and recipient deal with different banks, the procedure is more complicated. Often banks located in the same city are members of what is called a *clearing association*, which possesses an office where representatives of the various banks meet to determine how much money they are due each other. Checks are always going each way between any two banks and only the difference in any particular day has to be transferred. The bank which owes this difference usually pays it by transferring by check a portion of the deposit which it keeps in a reserve or bankers' bank. Where there is no reserve bank, country banks keep deposits with banks in the larger centers and use these deposits to meet the clearing differences. But where, as in the United States and Canada, a reserve bank organization is in existence, commonly banks are required by law to maintain deposits with the reserve bank and these deposits can be employed to meet the clearing transfers. In America, the *national banks* (the banks with federal charters) are required to be members of the reserve system but membership is voluntary for the *state banks* (chartered by the states in which they are

located). Non-member banks (that is, those which are not members of the reserve system) transfer checks through members, in many cases, and both classes of banks sometimes make transfers through other commercial banks, this being the method which was followed generally before the establishment of the reserve system.

In America, the situation is complicated further by the fact that there are a number of reserve banks, twelve in all, each serving its particular part of the country. It follows that very frequently in the United States transfers have to be made between banks which keep their reserve or clearing deposits in different reserve banks, say those located in Boston and New York respectively. What happens in this case is that the reserve banks have to calculate how much they owe each other and transfer the differences through a special fund kept by the central authority of the reserve bank system, the *Inter-District Settlement Fund*, in Washington, with which each of the reserve banks keeps a deposit for the purpose.

Thus, a check from one person to another who is a customer of the same bank leads to a transfer of funds in this bank's possession and has no effect outside. A check which concerns two banks ultimately alters the deposits kept by these banks in the reserve banks or elsewhere, and, if more than one reserve bank is involved, affects also the ownership of deposits in the *Inter-District Settlement Fund*.

DEALING IN CAPITAL—DEPOSITS AND LOANS

Conceivably banking might have been developed on the basis that the depositor paid for the safekeeping of his money. Banks indeed operated on this principle in some European countries, centuries ago. But later there appeared the practice of banks lending or investing the money entrusted to them, agreeing merely to return or transfer the same amount when called upon to do so. Under these con-

ditions, the interest received from loans and investments proved sufficient to meet the banks' operating costs and to permit the payment of interest on deposits in many cases.

In our own time, however, after the depression of the 1930's, the demand for loans declined and interest rates fell so considerably that many banks instituted what they call *service charges*, such as fees for each check paid from an account. In spite of this development, interest on loans and investments is still by far the major part of the income of the banks, as is shown by the following figures of the expenses of about 200 New England banks in 1944.

TABLE 22. BANK INCOME

Percentage of total income (excluding security profits and losses)
made up by

loan interest	30.9
bond interest	51.0
service charges	8.3
other items	9.8
	<hr/> 100.0

THE INVESTMENT OF BANKING FUNDS

Since the banks undertake to repay their depositors **on** demand or on short notice, it follows that they must exercise care in the disposition of the funds in their charge.

Deposit in reserve bank. If they are members of the reserve system, the banks are required to keep a proportion of the deposits their customers make with them in the form of a deposit with the reserve bank covering their area. The balances kept with the reserve banks are used for clearing purposes, as has been mentioned, and if at any time they fall below the required percentage, something must be done to restore them. For instance, the banks may sell securities or borrow on these from the reserve bank. As with the

banks' own customers' demand deposits, no interest is paid on these deposits with the reserve banks.

Cash. Although there may be no legal requirement that a bank should keep on hand so much cash, banks find from experience that they need a considerable amount to meet their day-to-day transactions. However, keeping currency in the bank is costly. Not only is no interest earned on money which is kept on hand but expensive strong rooms have to be provided to hold it. Hence, banks do not care to keep more cash than is necessary.

Short-term securities. Against the contingency that more cash may be needed quickly, the banks invest some of their funds in short-term securities. Usually these bring in only a low rate of interest but they can be turned into cash speedily if necessary. Bills of exchange and promissory notes¹ are purchased from customers or from dealers, at a price which allows a small interest return. If these have been given originally in connection with certain types of transactions, the reserve banks will buy them from the banks, if desired. This process of buying bills and notes is called *discounting* and if they are resold to the reserve banks they are said to be *rediscounted*. *Call loans* are another form of short-term security. These are loans which are made directly, or through agents, to brokers operating on the stock exchange to enable them to carry their holdings of stocks. They are repayable on call (that is, on demand), as the name implies.

Bonds. A bond, in effect, is a promissory note which runs for a term of years, issued by a corporation or a government body. The bulk of the bonds owned by the banks are federal government issues and bank holdings have increased con-

¹ A bill of exchange is an order on someone to pay money, usually at a future date, which, after the person so ordered has written on it his acceptance, is called an *acceptance*. It is used very widely in international trade and sometimes for home transactions. A promissory note is a signed promise to pay and does not require acceptance. Banks commonly take promissory notes from customers to whom they make loans.

siderably in late years. Usually, the banks obtain a higher rate of return from their bond investments than from short-term securities and they can be sold quickly if necessary, although there always exists the possibility of a profit or loss being made in this event.

An objection to bonds as bank investments is that, in times of crisis, all the banks are apt to be selling bonds at the same time, with the result that the price may be low and a loss on sale may result. However, reserve bank regulations permit the reserve banks to lend to other banks on the security of the bonds they own, so this difficulty is less serious than it appears at first sight.

Customers' loans. Another high-yielding investment is the customers' loan. Generally, such a loan is given only after careful investigation of the applicant's financial position and personal reputation but, in spite of this, losses are not uncommon. Unless secured by notes which are eligible for rediscount at the reserve bank, customers' loans are among the most difficult of bank investments to convert into cash. They cannot be sold to anyone else and the banks have to wait until the borrowers are able to repay them.

Stockholders' funds. The capital supplied to the banks by their stockholders is used partly to provide the necessary buildings and equipment and partly to furnish a nucleus of funds for the banking business. This capital represents a certain security for the depositors. For example, in the event of a run on the bank or a bankruptcy, the depositors have a right to receive back their deposits before the stockholders can collect anything. In ordinary times in this country it was reckoned that the capital and other stockholders' funds, such as undivided profits, should amount to about ten per cent of the customers' deposits, but with the growth of the volume of deposits which took place during the Second World War this proportion in many cases was not maintained.

Below is a bank statement which will give some idea of the proportions commonly found between the various items, the bank issuing it being a single-office institution located in a city of about 250,000 people. The figures are rounded to the nearest \$100,000 for simplicity. The statement was issued in 1945.

TABLE 23. BANK BALANCE SHEET

Assets or property of the bank		Liabilities	
Cash on hand and in banks.	\$ 6,200,000	Demand deposits	\$42,800,000
U. S. Government securities.	36,300,000	Notice deposits	3,200,000
Other bonds and stocks.	1,300,000	Capital and other stockholders' funds	4,400,000
Reserve bank stock.	100,000		
Loans to customers.	6,200,000		
Bank building.	200,000		
Other items.	100,000		
	<hr/> \$50,400,000		<hr/> \$50,400,000

TYPES OF BANKS

The proportions which the various assets bear to each other vary considerably with the type of bank. Banks doing general business are given in this country the name *commercial banks*. The bulk of the deposits in such banks is withdrawable on demand and so the banks must keep a larger proportion of their funds in a liquid form (that is, a form readily convertible into cash) than would be necessary if *time* or *notice* deposits were more important (that is, deposits which are subject to notice of withdrawal.²) The

² At the end of December 1945, demand deposits in the United States totalled 75.100 million dollars and time deposits 48.500 million. These amounts were much higher than before the war. At the end of December 1940, demand deposits were 34.945 million dollars and time deposits 27.738 million. (All the figures are partly estimated.)

statement printed above refers to a bank of this type. The national banks and state banks^a are commercial banks, though most of them accept savings deposits to some extent. Some of the *trust companies* also do a large commercial banking business, as well as trust business as it is ordinarily understood, such as the administration of estates.

Savings banks receive deposits whose rate of turnover is less and which are subject to notice. They require a smaller percentage of cash on hand and are able to place a larger proportion of their funds in long-term investments, like loans issued to finance the purchase of real estate. The *Morris Plan* banks specialize in the small loan business. A different type of institution, not called a bank in this country but referred to as a mortgage bank in some places abroad, is the *building and loan association*, whose main investment field is the financing of building and the purchase of real estate. *Land banks* serve a similar purpose for the farms. In all these cases, the principle is followed that the type of deposits and the liquidity of the investments in which the deposits are placed are in keeping with each other.

THE SECURITY OF DEPOSITS

In the event of a run on the banks, they are able to secure aid from the reserve banks, because these institutions are empowered to lend to the commercial banks and rediscount the notes and bills of exchange which are in the latter's possession. The Federal Deposit Insurance Corporation was established some years ago to insure deposits up to \$5,000 in the banks which join it and the existence of this insurance gives ordinary deposits a degree of security that they had not enjoyed in this country hitherto, besides reducing the likelihood of runs on the banks. Bank failures have been very frequent in America in past years and it is hoped that the

^a These names were explained on pages 256-257.

supervisory system which has been established, along with deposit insurance, will help to remedy this situation. It is of interest to note that Canada has had no bank failures in recent years, although her economy is in many respects similar to that of the United States. Some observers credit this to branch banking, arguing that the large banking chains which have been built up in Canada afford opportunities to average credit risks and to develop more efficiency in operation and supervision than is possible to the small independent banks commonly found in this country.

DEPOSIT CREATION BY THE COMMERCIAL BANKS

An interesting and important point is that, in making loans, banks are not confined to the deposits which customers have entrusted to their charge. They can create deposits. In a sense, every loan represents the creation of a deposit, because the borrower receives a deposit, which he can transfer to someone else, in exactly the same manner as if he had paid money into the bank and transferred it. In practice, it must be remembered that loans are always being repaid and if, in any one period, the loans which are repaid are equal to new loans granted, then there is no net creation of deposits. All that has happened is that the volume of deposits has been maintained at the former level. But if more new loans are given than are represented by old loans repaid, there is a net creation of deposits in the period. If fewer new loans are given than old ones are repaid, then there is a net destruction of deposits.

In view of the fact that in this way banks can create deposits, that is, can themselves manufacture the funds they lend and on which they receive considerable return in interest, it may be wondered why they do not create as many deposits as possible, with a view to securing the highest return which can be got in interest on loans. The answer is that

they do create as many as possible or rather as many as they think wise in the prevailing circumstances. For, in large measure, circumstances determine how many deposits they are able to create. We must examine these circumstances.

Limits to credit creation

First, there is the practical rule that *all the banks must keep in step* in their credit policies. Borrowers do not agree to pay interest on loans they get for the purpose of leaving the money idle in their accounts but because they wish to spend it. Having arranged the loans, they proceed to spend the money lent them. In some instances, the checks they pay away go to others who are customers of the same bank, and in this case all that is necessary is a transfer of ownership of deposits in the books of the bank. No outside banks are affected. But very often the checks are paid to customers of other banks and every such check is responsible for a diminution of the clearing deposit which the bank giving the loan keeps at the reserve bank or elsewhere. Only if other banks are giving loans just as freely as is this particular bank, will the decreases in the clearing deposit be offset by increases in this deposit resulting from checks coming in, that is, from payments made out of the other banks.

It follows that a bank which is giving more loans than its competitors, relative to the size of its business, will lose some of its clearing deposit. A bank which is giving fewer loans than others will gain in its clearing deposit. A diminution in its clearing deposit is therefore a sign to the bank concerned to give fewer or smaller loans, an increase in this deposit a sign that more or larger loans can be granted. A clearing deposit can be allowed to grow indefinitely, if the bank which owns it is willing to face the loss of profits which results. But it cannot be allowed to fall indefinitely, because even if the law sets no minimum below which the deposit is

not permitted to fall, the bank which allows its clearing deposit to continue falling ultimately will find itself short of funds from which it can meet claims upon it. It may be able to stave off collapse for a time, by selling marketable securities, but finally it will run out of cash and be forced to suspend payment. As a matter of fact, banks which are members of the Federal Reserve system have a minimum clearing deposit set by law.⁴

Next, is the rule that a *certain proportion must be maintained between currency and deposits* in the whole monetary system. The proper proportion is not set by the banks but by members of the public, when they make their decisions regarding the cash they want to keep on hand as compared with what they keep in bank deposits, and the payments they prefer to make in currency as compared with those made by check. The proportion varies from time to time and depends on many factors. But the practical result of its existence is that, if the banks as a whole create too many deposits, the public needs more currency. It gets this by making withdrawals in currency from the banks. Currency is drained from the banks in this way. The ordinary banks cannot create currency but only the reserve banks and the Treasury, which issues it through the reserve banks. If the banks obtain additional currency from the reserve banks, their reserve bank balances are reduced, which raises the difficulty mentioned in connection with the first limit.

Third, the *reserve banks have a number of means for controlling the lending policies of the other banks*. They were in part established for this very purpose. But a description of this aspect must be left to the following chapter.

⁴ The national banks and certain state banks are members, as has been mentioned. The states fix their own rules on banking reserves, applicable to state-chartered banks.

SUMMARY

The commercial banks perform two broad functions. They act as transfer agents and as dealers in capital. Interest earned on loans and investments furnishes the bulk of the income of the banks. In addition to the commercial banks there are specialized banking institutions of different kinds but, in all cases, the principle is followed that the type of deposits and the liquidity of the assets are in keeping with each other.

The commercial banks have the power to create deposits, by making loans. Certain factors limit this power.

EXERCISES

1. Call at a commercial bank which operates in your district and ask for a copy of its statement, or balance sheet. Compare it with the statement given in the text. If a savings bank operates locally, obtain a copy of its statement in the same way. Compare it with the others.

2. From time to time, those who have checking accounts at the commercial banks are sent the checks they have given and that these banks have cashed. When it is returned to the giver in this way, there will be found stamped on the back of each check the names of the banks through whose hands it has passed in the clearing process. If you have a checking account, examine the names stamped on the backs of your returned checks. If you have no account of this kind, ask among your friends until you find someone who will let you see his returned checks. See if they correspond with what was said in this chapter on the clearing process. Probably most will do so, although not all, because the process is not entirely uniform.

PROBLEMS

1. Someone offers you a check in payment of a bill he owes you. Do you accept it without hesitation? If not, what points do you consider? Why?
2. Frequently, bank customers grumble because they are not given the loans which they request. List the reasons why you think a bank might refuse an application for a loan.
3. A savings bank advertises that it pays 1% interest on deposits, also that it will advance loans for the purchase of real estate at 5% interest. Why is there such a difference in the two rates?
4. The manager of a commercial bank is required to keep a certain proportion of his customers' deposits as a deposit in the local reserve bank. He is aware that his reserve bank deposit is close to the minimum but learns that some large withdrawals of his customers' deposits are in prospect. If you were in his place, what would you do?

CHAPTER 19

RESERVE BANKS

THE ORIGIN OF RESERVE BANKING

As the commercial banks developed, those situated away from the main financial centers adopted the practice of keeping deposits with other banks which were located in these centers. These deposits served as reserves which could be drawn upon in case of need. Payments to distant persons or firms could be made through them also and they could be used to collect sums due to the bank in other districts. The banks of small English towns in the early part of the nineteenth century acted in this manner, as did the banks of the United States prior to the establishment of the Federal Reserve system. Where foreign trade was important, reserve deposits of this kind often were kept in important cities abroad. The commercial banks of Australia and South Africa maintained deposits in London and still do so, and the Canadian banks have such deposits in London and New York.

All of this grew up on a voluntary basis and still exists on this basis in some countries, such as England, although in the United States, as has been noted previously, it is now compulsory for national banks to keep deposits with the local Federal Reserve bank. The same is true of Canadian banks in connection with their reserve bank, the Bank of Canada. Reserve banks, such as the Federal Reserve banks of the United States and the Bank of Canada, were established for this purpose and for others associated with it.

THE ORGANIZATION OF THE RESERVE BANK SYSTEM

Most countries have only one reserve bank but in the United States there are twelve, each with its allotted area of the country. Each reserve bank is owned by its member banks, that is, the banks with federal charters which are required to join, and such state banks as choose to do so and are able to qualify. Its directors are partly appointed by the central authority and partly elected locally by the member banks, which must observe certain rules intended not only to ensure representation of the banks but also of agriculture and industry.

The central authority, which is called the *Board of Governors of the Federal Reserve System*, is appointed by the President of the United States. The members have a term of fourteen years without possibility of reappointment, a provision which is intended to free them from subservience to the government.

THE FUNCTIONS OF THE RESERVE BANKS

Keeping the reserves of the commercial banks

Just as a commercial bank acts as a depository for the man-in-the-street, keeping his cash reserve in case of need, so do the reserve banks serve the commercial banks, holding funds on their behalf. In America and in many other countries, laws have been passed specifying the amounts which the commercial banks are required to keep on deposit with the reserve banks. In this country the banks which are members of the reserve system must keep in the reserve bank three per cent of the time deposits which their own customers have made with them, and seven, ten and thirteen per cent of the demand or checking deposits, the percentage in the latter case depending on where the bank is situated. The seven per cent refers to country banks, the ten per cent to all except

the largest cities, the thirteen per cent to New York and Chicago. All these percentages are minima. The banks may keep larger reserves if they choose to do so. The central authority of the Federal Reserve System has power to increase or change the percentages up to double these amounts. The Canadian banks are required to keep reserves of five per cent of their customers' deposits in the reserve bank and this is roughly the proportion which the English banks have found from experience to be necessary in that country.¹

Clearing

The commercial banks treat their deposits in the reserve banks in the same manner as individuals do their deposits in the commercial banks, that is, they draw checks on them to meet payments which they have to make to other banks. Such checks are given regularly to settle the claims which the commercial banks have on each other as the result of customers' checks between the various banks. This process is called *clearing* and it has been described in the preceding chapter.

Rediscounting and lending

Much as the individual goes to his commercial bank for funds when he is in need of them, so a commercial bank goes to its reserve bank. When a commercial bank requires funds, sometimes it rediscounts or resells the bills of exchange or promissory notes which it has discounted for customers or bought from them. Such rediscounting gives the bank a bigger deposit in the reserve bank, which can be drawn upon for clearing purposes or to secure additional supplies of currency. The reserve banks publish a *discount rate*, this being the percentage discount which they deduct as interest when purchasing promissory notes or bills of approved kinds.

¹ In England the law does not require these reserves.

The reserve banks also make loans to the commercial banks under certain conditions, secured by bonds, promissory notes or bills of exchange owned by the borrowing banks.

These provisions for rediscount and lending are very useful to the commercial banks, since they are enabled to conduct their business with smaller cash reserves than otherwise would be necessary. In their absence either the commercial banks would have to keep very much larger supplies of currency or they would run the risk of being unable to repay their customers' deposits when called upon to do so in time of crisis.

Issuance of currency

Another function of the reserve banks is to issue currency. The commercial banks get any additional currency which they may need exactly as the man-in-the-street obtains currency from his own bank. They draw on their balances with the reserve banks. The Federal Reserve notes are obligations of the reserve banks themselves. Other money is issued by the Treasury to the reserve banks. From there, currency passes through the commercial banks to the public.

Conducting government business

The reserve banks undertake considerable financial business for the federal government connected with taxes, bond sales and government expenditures for various purposes. The government, however, does not confine its banking business to the reserve banks. It keeps accounts with the commercial banks also.

Supervision

The reserve banks supervise their member banks and are themselves supervised by the central authority of the reserve system.

Controlling the volume of credit

Last, but in some respects the most important, is the function of controlling the volume of bank deposits in the country, commonly referred to as the volume of *credit*. The exercise of this function places the reserve banks in the position of being one of the major regulators of the entire economic system. The reserve banks have a number of instruments for this purpose; these are described in the paragraphs below.

CREDIT CONTROL MEASURES

Changes in the rediscount rate and other interest changes

If the reserve banks increase the rate of interest which they charge when discounting bills of exchange or promissory notes or on the loans they grant to the commercial banks, then there is a certain inducement to the commercial banks to make a similar alteration in their own lending rates. A rise in the interest rates the banks have to pay for loans from the reserve system increases their costs, which have to be recouped in charges to their own customers. A fall in these rates diminishes the costs. Further, the commercial banks know from experience that by using open market operations the reserve banks are able to force them to adjust their interest rates and consequently the commercial banks adhere to the policy set by the reserve banks.

The manner in which interest changes influence the volume of credit is explained more fully in Chapter 21. Here it is enough to say that a rise in the rates of interest which businessmen have to pay for loans diminishes the demand for loans and therefore lessens the number of new deposits created by the commercial banks. A high rate of interest also encourages the repayment of loans, every such repayment representing the disappearance of a deposit. It follows that

a high interest rate reduces the volume of deposits in the commercial banks. Conversely a low rate of interest stimulates new borrowing from commercial banks by their customers and discourages the repayment of old loans, thus increasing the volume of bank deposits.

Open market operations

If a reserve bank buys something, like anyone else it has to pay for it. The seller receives payment in the form of a reserve bank check. When this is deposited in the seller's commercial bank, this bank is placed in possession of a corresponding amount of reserve bank funds and its deposit at the reserve bank is increased. If we suppose that a reserve bank buys \$100,000 worth of government securities (which is what the reserve banks actually buy and sell) from a private individual in the open market,² in due course this individual will deposit in his commercial bank the reserve bank check for \$100,000 which he receives in payment. The bank in which the individual has his account will now have \$100,000 more customers' deposits and it will have also an additional \$100,000 on deposit at the reserve bank. If previously it had \$2,000,000 of customers' deposits and had itself a deposit of \$400,000 at the reserve bank, it now has \$2,100,000 of customers' deposits and \$500,000 deposited at the reserve bank. Before the transaction took place, its reserve percentage was twenty per cent ($\$400,000/\$2,000,000$); now it is nearly twenty-four per cent ($\$500,000/\$2,100,000$). The \$400,000 of reserve bank deposits were sufficient to give the commercial bank a twenty per cent reserve against \$2,000,000 of customers' deposits. The \$500,000 deposit at the reserve bank is adequate for a twenty per cent reserve against \$2,500,000 of customers' deposits in the commercial bank, so that if this is the per-

² The ordinary market in securities, here called the *open market* to distinguish such transactions from those between banker and customer.

centage which the commercial banks must keep³ it is now in a position to expand its loans to customers (which will lead to increased deposits) by \$400,000. Similarly, if the reserve bank sells \$100,000 of government securities to a private buyer, the individual who purchases them will have to pay the reserve bank. He will do so by means of a check on his commercial bank deposit. When the reserve bank receives his check, it will reduce the deposit it has on behalf of that particular commercial bank by the sum involved, \$100,000. The buyer's bank has now \$100,000 less on deposit at the reserve bank. It also has \$100,000 less due to its own customers. If previously it had \$400,000 on deposit and \$2,000,000 of customers' deposits, it now has \$300,000 at the reserve bank and \$1,900,000 of customers' deposits. Instead of having twenty per cent reserve against its customers' deposits ($\$400,000/\$2,000,000$), as it has before the transaction, it now has less than sixteen per cent ($\$300,000/\$1,900,000$). If a twenty per cent reserve is required, the commercial bank must either increase its reserve by selling securities from its holdings or portfolio, or it must reduce its customers' deposits by contracting loans to customers. Probably what the bank does in practice is to sell securities to cope with the immediate situation, while it contracts its deposits by allowing more loans to be repaid than are represented by the new loans granted. The reason for this is that it takes time to adjust the volume of deposits, because loans to customers commonly run for a period of time.

What was said in the preceding chapter regarding the necessity for the various commercial banks to keep in step must be remembered here. If the reserve bank buys only an

³ At the time this book is being written, commercial banks in the middle class for reserve purposes (which are subject to the legal minimum reserve of ten per cent against customers' deposits, with power given to the reserve bank authorities to increase this up to twenty per cent) are being required to maintain reserves of twenty per cent.

isolated \$100,000 of securities, then the additional credit which is made possible must be spread over the various commercial banks. It cannot all be granted by a single bank, as we have imagined in our example. If only one bank is affected directly by the reserve bank purchase, this bank may start to expand its deposits but it will lose reserves through the clearing process and the transfer of these reserves to other banks will permit them to expand deposits also. Similarly with a reserve bank sale of securities. The contraction of deposits is spread over the banking system. When the bank which is affected directly contracts its deposits, it gains reserves in the clearing process and the loss of these reserves forces the other banks also to contract their customers' deposits. In practice, if the reserve authorities decide to buy or sell securities for the purpose of influencing the volume of deposits in the commercial banks, usually a number of transactions are undertaken and many banks are affected directly, not just one as in our example.

As the operations were illustrated in this section, it was assumed that the commercial bank had only its minimum reserve percentage before the transactions occurred. Actually, the bank may have more reserve deposits than the minimum percentage and this may be true of the banks as a whole. If the commercial banks have excess reserve bank deposits, and the reserve banks desire a contraction of credit, then obviously they (the reserve banks) must carry their sales of securities to the point where all the excess reserves of the commercial banks are used up before the policy becomes effective, unless some other means exists for dealing with the situation.

Changes in the reserve percentage

A more direct although less flexible method exists for achieving the same objective. The central authority of the

reserve system is empowered by law to alter the reserve requirements. The three, seven, ten and thirteen per cent reserves previously mentioned may be doubled or the percentages may be fixed anywhere between these limits. If the reserve percentage is fixed at ten per cent for a particular area and a commercial bank has its legal minimum (\$100,000 against each \$1,000,000 of customers' deposits), increasing the reserve requirement to twenty per cent would necessitate holding \$200,000 on deposit at the reserve bank against each \$1,000,000 of customers' deposits. Conversely, lowering the percentage from twenty to fifteen per cent would diminish from \$200,000 to \$150,000 the reserve which must be kept against each \$1,000,000 of customers' deposits.

If the reserve percentages are not at their legal maxima, credit may be contracted by raising the percentages. Credit expansion may be encouraged by lowering the percentages, providing of course that they are not at their legal minima. Here again it must be borne in mind that if the commercial banks have excess reserves, an increase in reserve requirements will not be effective until the point is reached where the excess reserves have been absorbed.

Other measures

Certain other measures are available. The reserve bank central authority has been given powers to regulate such matters as the percentage which anyone who purchases securities must pay from his own resources before he becomes eligible for a bank loan. Evidently this will influence the volume of loans granted. Also an attempt has been made to build up a practice in which the commercial banks adhere voluntarily to the policies initiated by the reserve banks. Then there is the possibility of legal changes, such as are mentioned later in this chapter.

Effectiveness of credit control measures

All in all, it is clear that the reserve banks possess considerable power to influence the volume of credit. But the limitations of this power should be realized. In the first place, these measures in their nature are more effective in checking undue expansion of credit than in promoting expansion. A loan requires the customer's willingness to take it, as well as the bank's consent to grant it. The commercial banks can refuse loans to customers who want them but they have no means of making customers request loans which the banks are prepared to grant. And, in the second place, although the measures are reasonably effective in ordinary circumstances, there are situations in which they are ineffective. When prices are falling rapidly, few loans are likely to be requested, even if the banks are offering them free of interest, because prospective borrowers will think it unwise to buy goods at such a time when by waiting they can secure them more cheaply. Or, if the prices of commodities are rising sharply, even very high rates of interest may be inadequate to check the demand for loans. In the price inflation of 1922-1923, the German banks were forced to resort to rationing their loans to customers, because high interest rates were no deterrent. And in a severe depression, government spending may have to be undertaken on a large scale in order to increase prosperity, before private enterprisers will begin to ask for loans. This aspect is considered in Chapter 21.

BASES OF RESERVE BANK POLICY

What lies behind credit policy? Various criteria have received support.

The gold standard

During the nineteenth century and on to the First World War, the leading commercial countries operated a gold

standard. In each country an influx of gold was regarded as a signal that currency and credit should be expanded, and an outflow of gold was a sign to contract currency and credit. The reserve requirements applicable to the reserve banks themselves in this country were based on these signs. When the reserve banks were established, they were required to keep a minimum of thirty-five per cent of gold against all deposits with them and a minimum of forty per cent against the Federal Reserve notes which they issued. The requirement of gold reserves has been continued under the newer conditions of more recent years, although since 1934 the reserve banks have held *gold certificates* instead of gold (the certificates being issued by the Treasury against gold deposited with it, dollar for dollar, that is, the certificates being backed a hundred per cent by gold), and the minimum reserves required to be kept by the reserve banks against both notes and deposits have been reduced in 1945 to twenty-five

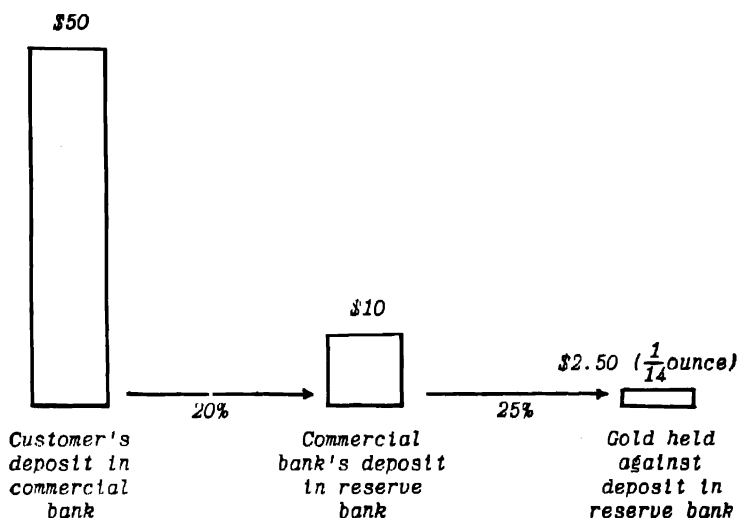


FIGURE 16. GOLD RESERVE AGAINST BANK DEPOSIT

per cent. Hence, the customer's checking deposit at his commercial bank is linked now to gold in the manner indicated in Figure 16, which assumes the twenty per cent reserve requirement against customers' deposits that was applicable to middle-size cities in 1945.

Figure 17 illustrates the position regarding the Federal Reserve notes, which are in general circulation in denomina-

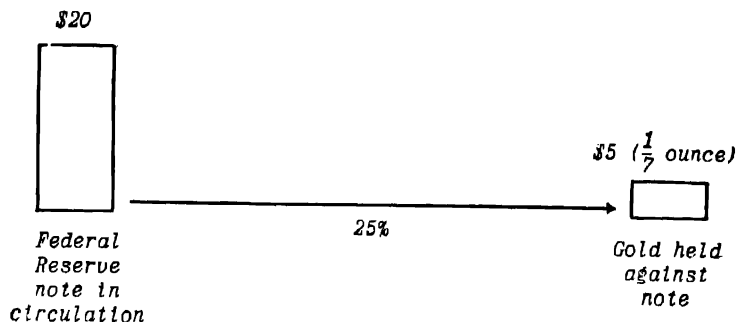


FIGURE 17. GOLD RESERVE AGAINST FEDERAL RESERVE NOTE

tions of five dollars and upward and which provide the bulk of the larger notes in use in this country. They were discussed in Chapter 17.

The gold standard is no longer existent, in an un-managed form. Before the Second World War, large quantities of gold came into this country without credit's being expanded, the gold being sterilized in the manner explained in Chapter 17. Then the fact that the percentage reserves required to be kept by the commercial banks can be changed introduces an element of elasticity. The same is true of alterations in the gold content of the dollar and in the percentage gold reserves required against reserve bank deposits and notes. The dollar value of an ounce of gold was raised in 1934 to permit an expansion of credit without more gold's being held, and in 1945 the reserve percentages required of the reserve banks were lowered with the same objective. There

is no reason to suppose that changes of this kind cannot be carried further or, if thought desirable, reversed.

A stable price level

The automatic gold standard of the nineteenth century and early years of the present one ensured not price stability but price uniformity. Price levels in the various countries were kept in line with each other. When the gold standard came to be managed, after the first world war, price stability received more attention. In the latter part of the 1920's both objects seem to have been achieved, for the leading foreign countries had exchange rates which were fixed to the American dollar,⁴ while the monetary policy pursued by the Federal Reserve banks preserved a reasonably stable price level in the United States. But after 1929 prices declined in the gold standard area and one country after another abandoned gold in preference to suffering further price deflation.⁵

Prosperity, full employment

Most of these countries, after abandoning the gold standard, pursued credit policies which were intended to restore prosperous business conditions and reduce unemployment. Recently attention has been directed more formally to the criterion of full employment as a guide to monetary policy. This subject is examined in some detail in Chapter 21.

SUMMARY

Reserve banking arose out of experience but the Federal Reserve banks of this country, like some other reserve banks abroad, were established specially for this purpose.

The reserve banks keep the reserves of the commercial banks, clear the claims of the ordinary banks against each

⁴ See Chapter 23.

⁵ A *deflation* is a marked fall in the general price level, the opposite of *inflation*.

other, rediscount and lend to the other banks, issue currency, conduct government business, and supervise the commercial banks which are members of the reserve system. An important function is the control of the volume of credit in the country.

Among measures available for credit control are changes in rediscount and other interest rates, open market purchases and sales of securities, and alterations in the reserve requirements of the commercial banks. The reserve banks themselves are required to maintain certain reserves in the form of gold in the Treasury.

As bases of reserve bank policy, support has been given to a free-working gold standard, a stable price level and full employment.

EXERCISE

Each Friday morning the newspapers carry copies of the weekly reserve bank statement. Examine one of these. .

PROBLEMS

1. Supposing that the maximum volume of credit has been created which is permissible under existing laws and regulations, what means could be used to render possible the creation of additional credit? Under what circumstances do you think that such a policy may be advocated?
2. If in the United States it is considered necessary to prescribe by law the reserves which commercial banks must keep in the reserve banks, how do you think that England has managed to get along without laws of this nature?

CHAPTER 20

THE PRICE LEVEL

That prices tend to move together is a matter of common observation. The marked rise which took place during the Second World War is an example familiar to all.

THE HISTORY OF PRICES

If we look back into history, we find that prices in the Middle Ages were very low according to modern standards but that during the sixteenth and seventeenth centuries they rose considerably. Pronounced changes have been witnessed during the last hundred years. About 1850 prices in America and Europe began to rise and the upward movement continued until the end of the Civil War in this country and until the early 1870's in Europe, after which a decline began that lasted until about 1895. Then the trend was upward again, the rise being greatly accelerated during the war of 1914-1918 and reaching its peak in 1920. The next year saw a severe slump, after which there was relative stability until 1929; then a new decline set in which lasted until about 1932. At that time the movement turned upward again, the upswing becoming more noticeable during the Second World War. All this, of course, is a general view only. There were many short-term ups and downs, superimposed on these longer trends.

That a general view of this kind can be taken for a large part of the world is itself informative. In prices, at all events, evidently the world has been knit together in some way. Economists have found no difficulty in explaining these broad price movements by the relationship between the supply of money and its demand. When the supply of money has been

increasing at an unusual rate, prices commonly have risen. Looking for causes of the rise which took place in the sixteenth and seventeenth centuries, writers found the key in the heavy flow of gold and silver from the South American mines which were developed by the Spanish conquerors. In the same manner, it can be said that the gold discoveries of 1849 in California (when the "miner, forty-niner" made famous by the song "Clementine" crossed America with his fellows to work in the gold diggings) and the Australian discoveries shortly afterward were linked with the period of rising prices that followed. The enormous output of the South African goldfield, opened up in the middle 1880's, can be considered to explain the rise in prices which took place after 1895. Similarly, the rapid price upswings of the Civil War and the two world wars may be associated with the issue of additional paper currency and the creation of bank deposits during these wars. On the other hand, the fall in prices experienced in the generation before 1895 can be explained in part by a great increase in the demand for gold, consequent on a number of countries adopting the gold standard, without there being any corresponding increase in supply.

THE QUANTITY EQUATION

It is entirely understandable, therefore, that economists should have developed what is called the *quantity theory of money* to explain the general level of prices. As first advanced in the sixteenth century to explain the rise in prices then under way, the theory stated that prices were determined by the quantity of money available. Later, however, it was recognized that other factors entered the picture. The present-day theory takes account of three factors: the quantity of money, the velocity or rapidity of circulation of the money, and the volume of goods to be exchanged or the volume of

trade. A common mathematical expression of the contemporary theory is given as

$$MV = PT$$

or

$$P = \frac{MV}{T}$$

T

where M equals the volume of money, V equals the velocity of money or its turnover or rate of circulation, and T equals the volume of trade.

What this means is that if there is more money to spend, other factors remaining the same, prices rise. If there is less money to spend, prices fall. If the velocity of money increases, prices rise, and if it diminishes, they fall. On the other hand, if the volume of trade increases, prices fall, and if it decreases, they rise. That the two sides of the equation are equal can be understood if we note that MV is the quantity of money spent multiplied by the average number of times each unit of money is spent, which gives us the total money value of the transactions which take place during a particular period. The volume of trade during the period multiplied by the average price also gives us the total money value of the transactions. The operation of the several factors may be explained by examples.

The effect of quantity

If we suppose that the government prints a billion dollars in paper money or that it borrows a billion dollars of newly-created deposits from the banks, and proceeds to spend this money, it is evident that this new money represents a demand for goods just like other money. The demand for goods is a billion dollars greater than before, so prices rise. Something of this kind has been seen in operation during both world wars.

The effect of velocity

If the American people should become convinced that there is to be a further increase in prices, then no doubt many of them would hasten to spend some of the money which they have on hand or in the banks, to buy goods before the prices increase. This would mean that there would be an increased demand and prices would rise. In other words, the expectation of a price increase speeds up velocity and so brings about a rise in prices. Conversely, if people spend less because they have heard rumors that a depression is coming, the lowering of velocity will cause prices to fall. This factor is seen in action frequently in the commodity markets and the stock exchange and it is so important that often big changes in prices are accompanied by only small alterations in the quantity of money, although by relatively large shifts in velocity. But the opposite was true during the war just ended. The quantity of money in circulation increased greatly although there was no great change in velocity, a point which is explained partly by the phenomenon discussed in the last section of this chapter.¹

The effect of the volume of trade

If large quantities of additional goods come to market, although neither the quantity of money nor its velocity is increased, supply is greater relative to demand and prices fall. This was another factor, in addition to that already mentioned, which helped to cause the decline that took place in world prices before 1895. In America particularly,

¹ Total deposits and currency outside banks in this country were a little less than 71 billion dollars at the end of December 1940. They amounted to 100 billion in 1945. On the other hand, the annual rates of turnover of demand deposits (except interbank and government deposits) were, for 1940, 17.1, in New York city and 18.6 in a group of other leading cities, while the corresponding figures for 1945 were 24.2 and 16.1 respectively.

the output of goods was growing by leaps and bounds, because of industrial expansion in the East and the extension of settlement in the West.

Interdependence of the factors

The several factors are not independent of each other. It has been pointed out² that the price level affects mining costs and therefore under gold standard conditions it influences the volume of money. In Chapter 21 it will be shown that the quantity of money has an important effect on the volume of trade, because under some conditions trade can be stimulated by increasing the quantity of money or discouraged by diminishing the quantity. Velocity also affects the volume of trade in the same circumstances. Evidently what we have in this equation is not a set of three independent factors, each of which influences the price level, but an interdependent whole.

THE MEASUREMENT OF PRICE CHANGES

Since we frequently refer in this chapter to the price level, something should be said regarding the manner in which it is measured. Statisticians prepare what are called *index numbers*, which are averages of prices that are so calculated as to be comparable with each other.

The procedure followed in computing an index number is somewhat technical, because often a large number of prices are taken and elaborate mathematical methods are used in the calculations. But in essence what is done is to compare the price of a commodity, such as wheat of a certain grade, at one time with the price of the same commodity at another time, combining this with similar comparisons made for other commodities. A particular year or period of years is taken as the base, say 1914 or the average of the years

² See Chapter 17, page 244.

1935 to 1939. This is given a value of 100. Prices in subsequent years are expressed as percentages of the prices of the base year.

An example will illustrate. Suppose that meat sells for twenty cents a pound in 1940, which we take as our base year. In 1940 also, milk sells for ten cents a quart, and bread for ten cents a loaf. Then in 1942 it is found that the same grades of these three commodities sell for forty cents a pound for meat, fifteen cents a quart for milk, and ten cents a loaf for bread. An index number can be calculated, by expressing each 1942 price as a percentage of the 1940 price. Thus meat in 1942 is 200%, milk is 150%, and bread is 100% of the 1940 prices. The average of these three percentages is $450/3$, that is, 150. Our index number of prices is 150 in 1942, as compared with 100 in the base year of 1940. An index number prepared in this way is said to be *unweighted*. If it is felt that bread is twice as important as meat, and milk one and one-half times as important as meat, then we can *weight* the index number accordingly. Our calculation now will be as follows:

Meat	200×1	$= 200$
Milk	$150 \times 1\frac{1}{2}$	$= 225$
Bread	100×2	$= 200$
Totals	$4\frac{1}{2}$	$= 625$

The index number equals $625/4\frac{1}{2}$ or 139 (approximately).

The resulting index number is lower than before because we have given the greatest weight to the cheap commodity, bread. Evidently care has to be exercised in preparing and interpreting index numbers. The commodities to be included and the weights to be given to them should be selected in the light of the purpose the index number is intended to serve. If we want an index number which is representative of the costs of living of working-class people in American cities,

then prices should be obtained from various centers of population for articles consumed by workers, and weights assigned which are proportional to the amounts spent on the several items. Otherwise our index number may be misleading. Even if we secure a satisfactory index, it must be remembered that such an index is only of limited help in examining the position of a man in unusual circumstances, such as the resident of a trailer camp at the edge of a war boom town.

THE EFFECT OF PRICE CHANGES

In view of the observed instability of prices, it appears desirable to investigate the effects of price changes on the several classes of the community.

Those whose incomes are fixed in money for long periods, or whose incomes are slow to alter when not absolutely fixed, are likely to suffer by a rise in the general price level. Their fixed incomes buy fewer goods when prices are higher. In this class we must place bondholders, those with annuities and fixed pensions, those who own property rented on long leases, and the salaried classes whose incomes change very slowly. On the other hand, groups who have obligations which are fixed or which alter slowly will gain, because their obligations are met with smaller loss of purchasing power. A farmer or a house owner whose property is mortgaged gains at the expense of the mortgagee. A stockholder in a corporation which has issued bonds benefits at the expense of the bondholders. How enterprisers fare depends largely on the conditions under which their businesses operate. A company which supplies water or electricity to a residential area finds that its charges are governed by a regulatory authority and are slow to alter. The sales of its product are fairly constant, while its costs increase. It will suffer when prices rise. On the other hand, a grain farmer, the owner of a

mine or an ordinary manufacturer may find that his selling prices increase more than do his costs, while the sales of his product do not diminish and may even increase. He therefore makes more profit in a rising price period.

The opposite is true when prices are declining. Bondholders, annuitants, pensioners and salaried workers gain. The owners of mortgaged property lose. The water or electricity company supplying a residential district may be expected to gain. The grain farmer, the mine owner and the ordinary manufacturer lose.

The situation is complicated by reason of the fact that price movements in many instances are accompanied by changes in the level of business activity. Frequently the physical volume of sales increases when prices rise, and diminishes when they fall. As a result, it may be found that a loss resulting from a change in prices as such is more than compensated by a gain from increased output. For instance, many American railroads increased their profits very considerably during the Second World War, notwithstanding that their wages and certain other costs rose more than their selling prices, that is, their rates. The reason is to be found in the great expansion which took place in the volume of railroad traffic. Another factor was the circumstance that a large proportion of their total costs were relatively fixed, being accounted for by roadbed and equipment.

WHAT PRICE BEHAVIOR IS MOST DESIRABLE?

Stable prices

In view of the manner in which price changes affect the position of the various groups, often it is said that an endeavor should be made to stabilize the price level. On the face of it, such a plan would be beneficial because it would increase the security which men would enjoy in their con-

tractual relations with each other. A salary or a rent would represent a stable obligation or income, not something which is speculative.

But the plan is not without difficulties. In the first place, all prices cannot be stabilized for the reason that different groups of prices bear a changing relationship to each other. Thus, if the prices of commodities are stabilized over a long period, as techniques improve less labor and other factors of production will be required to produce the commodities. Accordingly, since the same revenue from the product will have to be divided among fewer units of the factors of production, the incomes from the factors will increase. In other words, stable commodity prices mean rising factor prices. Conversely, if factor prices are stabilized, that is, if wages, interest, rent and profits are kept the same, the result of using less of the several factors of production in making the finished commodities will be that the prices of the finished goods will decline. Stable factor prices, therefore, mean falling commodity prices under these conditions.

Shall we stabilize commodity prices, or factor prices, granting that both cannot be stabilized? Stabilization of the former has been advocated on the ground that persons with fixed incomes would be prevented thereby from obtaining more goods than they get at present. If factor prices are stabilized and commodity prices permitted to decline, as will occur with improvements in production methods, the recipients of fixed incomes will benefit from progress as other classes do, because their fixed incomes will purchase more commodities. It is said to be objectionable that bondholders and rent receivers should benefit from progress. Not only does this view ignore the possibility that such a plan would diminish the incentive to save but it also does not take account of the fact that the fixed income classes include such groups as widows and young children, the aged, and many

endowed institutions, some of which (such as the children and certain endowed institutions) may have great possibilities of productive contributions to society.

Gently rising prices

A slowly rising price level has been advocated by some who believe that this would promote business activity and increase the volume of employment. It also would prevent the fixed income classes from sharing fully in economic progress, although there is room for disagreement on the desirability of such a policy, as has been pointed out.

Falling prices

Price deflation has had its supporters as a temporary or short-term policy, as when England after the First World War deliberately forced a fall in her price level for the purpose of restoring the pound (which had been inflated during the war) to its prewar gold value. The result was a considerable increase in unemployment and in consequence the policy was much criticized.

Recent discussion

In general it may be said that recent discussion has given less emphasis to the level of prices as such and more to the volumes of employment and income, matters that receive consideration in Chapter 21.

PRICE CEILINGS AND THE QUANTITY OF MONEY

In recent years there has appeared in various countries what is at first sight a peculiar phenomenon. Currency expansion has taken place, while at the same time the prices of the more important commodities have not been permitted to rise accordingly, being fixed by price-control authorities. This occurred in America and elsewhere during the First

World War to a certain extent and still more during the second war. It was particularly marked in Nazi Germany, especially after the beginning of the war in 1939. During the early years of this war, Germany was in a remarkable position so far as the price level was concerned. Her prices remained steady despite considerable monetary expansion. Prices in other warring countries advanced, although in some cases less so than might have been expected.

The explanation is comparatively simple. If the extra money had been allowed to compete for commodities in an unregulated market, the price level would have risen. But to some extent people were persuaded by propaganda not to spend their extra money and so were content to carry it in their pockets as currency or leave it on deposit in the banks. The velocity of circulation slowed down as the quantity of money increased. Then, even if the holders of the additional money wanted to spend it, they found it difficult, if not impossible, to secure goods. Rationing was widespread and the possession of the corresponding rationing tickets was necessary, as well as money, to make purchases of restricted goods.

In such a situation it could be expected that there would be intense competition between prospective buyers in the markets for non-rationed commodities. This was true in America during both world wars, when luxury goods became very expensive. In the second war especially, extensive black markets developed in many goods which were subject to price control. In Nazi Germany there was a great increase in the demand for corporation shares and share prices rose to high levels for a time, after which the government subjected the stock market to regulation also. Ultimately in that country the regulation of markets and prices became so complete that holders of the extra money found it virtually impossible to spend it on goods (or claims on goods, like shares)

of any kind. All that they could do with it was to keep it on hand or in the banks, or lend it to the government in order that the government might spend it again.

SUMMARY

Prices tend to move together and so we can speak of a general level of prices. Index numbers are used for purposes of measurement. The factors which influence the price level are studied. Although these can be identified, it is evident that they are not independent but that they influence each other.

The effects of price changes on the several groups of society are examined, as are some of the proposals which have been made concerning price stabilization and similar objectives.

The problem presented by monetary expansion under price-control conditions is studied briefly.

EXERCISE

Ask your librarian for a publication containing an index of prices which goes back a number of years. Examine this. Note the range of the high and low points. If more than one index is given (*e. g.*, an index of wholesale prices and one of the cost of living), compare their movements.

PROBLEMS

1. Answer again Problem 1, given at the end of Chapter 17, page 254.
2. Bread sells at a very stable price. The demand also is very steady. How would you expect baking companies to fare in a depression? In a time of high prices?
3. Suppose you had a considerable balance in the bank and you feared a price inflation, what would you buy and why?

CHAPTER 21

BUSINESS MOVEMENTS

It is a matter of common knowledge that the volume of business alters considerably from time to time. Even a cursory examination reveals that several factors are at work. These will be considered.

LONG-TERM TRENDS DUE TO POPULATION CHANGES

Few will question that the outstanding change in America has been the long-term growth in population which has transformed the colonies established first on the seaboard into a nation of a hundred and forty millions, carrying settlement from the Atlantic to the Pacific and developing the resources of what was a very sparsely populated continent. Population has grown not only through immigration but to a larger extent as the result of an excess of births over deaths in America, as is usual in countries which have large undeveloped resources. Production has increased amazingly. The number of workers has increased with the growth of population, and the product per worker has gone up as the result of inventions and other improvements in production technique.

These accomplishments have made Americans feel self-confident. Perhaps they have been led to be overconfident at times, resulting in exaggerated booms and disappointing failures. Expansion has been the keynote in American business management and in some instances growth itself has seemed to be a major objective. Firms have given bonuses to their salesmen to stimulate sales and cities have conferred favors in tax rates for the purpose of attracting industries from elsewhere.

In view of what has been said in Chapter 8 on the subject of optimum size, it will be realized that growth as such is not necessarily advantageous to a business. Investigators have commented at times that the largest enterprises are not the most successful, if success is measured by maximum profit per unit of capital invested. The same is true of the size of a city—a big city is not necessarily better than a small town. There are advantages of larger size, such as greater specialization in stores and amusements, but there are also disadvantages, such as the increased time required for traveling. So far as size of business is concerned, probably the repeated advances in production techniques, whose effect in most cases has been to increase the optimum size of enterprise, have tended to keep the optimum in advance of the existing size, and profits have increased as a result of expansion. Once the optimum is reached, however, there is no further benefit from expansion but a disadvantage instead.

SEASONAL MOVEMENTS

Another well-known type of business change is caused by the seasonal factor. Some industries are strongly affected by weather and other seasonal conditions and by social customs. The harvest is reaped in the fall. In the northern parts of the country building is impeded in winter. More fuel is required in winter. Gifts are purchased at Christmas. Vacations are taken in the latter part of the summer. All these have effects on the state of business.

If the product can be stored without much difficulty, sales can be seasonal without any great effect on the volume of production, as is the case in the manufacture of farm machinery. But if the raw material or the product cannot be stored successfully, production must fluctuate, as with the canning of fruit and vegetables. In the latter event, perhaps the labor required by the seasonal industry can find employ-

ment elsewhere at other times, as in the case of Canadian farm workers who engage in lumbering in the winter. But if this cannot be done, the seasonal industry must sell its product at a sufficiently high price to maintain the labor force all the year round. The same applies to machinery and natural resources.

An example is the vacation industry in some districts. A nucleus of people who are content to work intensely for only part of a year, supplemented by workers drawn from the cities for the season at wages which are low because of other attractions, operate a vacation area and charge prices which preclude visits of any great length by members of the poorer classes. Boats and summer cottages are provided. Supply equals demand on this basis, as elsewhere in the private enterprise system.

SHORT-PERIOD MOVEMENTS—DAILY, WEEKLY, MONTHLY

Pronounced weekly and monthly movements are noticed in such industries as banking and the retail trades, connected with factors like the periodic payment of wages and salaries and the general observation of Sunday as a day of rest and worship. Regular staffs of workers are extremely busy at one time and relatively inactive at another, while in some cases additional help is engaged at the peak periods. High-school boys are hired to assist in grocery stores on Saturdays. Even daily movements are significant in some retail establishments and in the production of electricity, for example. Here again, part-time labor may be drawn upon, such as schoolboys who distribute newspapers.

THE BUSINESS CYCLE

The business cycle may be described as a wavelike motion in business activity which generally lasts a few years from

crest to crest (from seven to ten years in most cases) and varies considerably in extent. The construction industries, including building and the metal trades, are most affected. The major movements spread throughout the entire commercial world, although they are not synchronized in detail in the various countries. For instance, in the great depression of the early 1930's, Australia experienced the worst stage earlier than the United States and apparently already was moving upward in 1931. England turned the corner about the third quarter of 1931. Examining the American situation in retrospect, possibly the bottom for this country can be put at about the middle of 1932, although the banking crisis of the early months of 1933 made the latter year more spectacular.

Although the movements are referred to as cycles because of their recurrence, they are by no means regular in either length or amplitude. In some periods the occurrence of several short-term fluctuations makes it difficult to identify a cycle. During the present century, 1907, 1920, 1929 and 1936-1937 were peak years; 1908, 1921, 1932 and 1937-1938 were bottoms. Perhaps the slump which took place in the latter part of 1937 would have gone farther had it not been for an underlying upward trend consequent on defense expenditure in various countries. As to extent, the depression of 1931-1933 was by far the most severe which has been experienced since statistics have been available, while that of 1937-1938 was not very serious.

An explanation of the business cycle has been sought for many years. Some writers have offered one explanation, some another. At present the view most generally accepted is that there are a number of causal factors and the manner in which they are interlinked and the time taken for controls to operate explain the ups and downs.

Description of a typical cycle

A period of great prosperity is spoken of as a *boom*. It is a time of high production and little involuntary unemployment. Goods sell briskly at relatively high prices and there is a feeling of optimism among businessmen. Bank deposits are high and consequently reserve percentages are low. The volume of money in circulation is large. There is considerable speculation on the stock exchange. In the early stages of the upward movement of prices and production, costs have lagged behind business revenue because not only are such costs as rent and salaries frequently governed by contracts which run for a period of time but there is much unemployment among the factors of production. Workers and equipment are idle or under-employed; materials are stock-piled and the output of such resources as lumber and minerals can be increased easily. In these circumstances the supply of the factors of production is very elastic and considerable increase in demand can take place without much rise in price. Enterprisers find production profitable in these circumstances. But the fuller employment which characterizes a boom removes this condition. The factors of production now are fully employed, so that their supply is inelastic, and increased demands for them from enterprisers raise their prices in a greater degree. Raw materials are relatively costly; labor is dear; interest is high.

The situation may be illustrated by reference to Table 12, which shows cost data in the trailer factory that we studied in Chapter 8. Figure 18 gives these cost data, plotted on a scale suitable for our present purpose. We may imagine that in the early stages of a business upswing the output of the trailer plant is Oa and in the boom it is Ob . Our data show a cost of an for an output of oa and a cost of bm for an output of Ob . But it must be remembered that the data of Table 12 allow

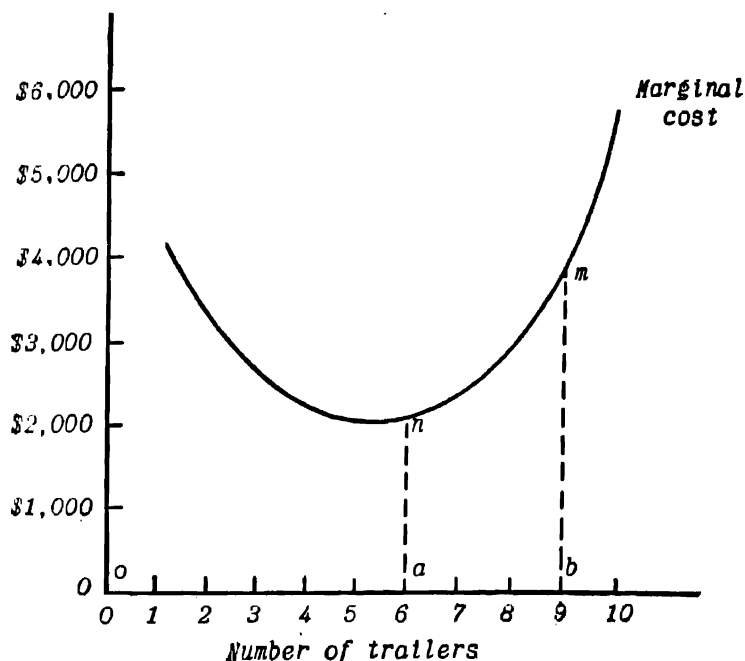


FIGURE 18. MARGINAL COST, TRAILER FACTORY

only for the increase in costs caused by internal conditions in the enterprise: the factors of production are used in greater quantity per unit of output as the volume of production increases. If now we take into account the higher prices of the factors of production which result from the expanded demands of boom conditions, explained in the preceding paragraph, evidently there will be a bigger increase in production costs than that shown in the figure.

One of the costs is interest on the capital which is required to finance business expansion. As the business upswing develops into a boom, capital becomes scarce like the other factors. The growing scarcity of capital has a peculiar but

important effect. As is shown elsewhere,¹ a rise in interest rates causes the sale price of investments to decline. New construction becomes less attractive under such condition because the stocks and bonds which have to be sold to finance it cannot be disposed of so advantageously to investors. Investments sell at lower prices, which is the same thing as saying that the rate of interest obtainable on investment rises. Once it becomes apparent that investment values are likely to fall, holders hasten to sell before the decline becomes serious. Their sales expedite the downward movement and pronounced slumps may take place on the stock exchange. The volume of new construction lessens rapidly. Business activity declines until depression conditions are reached. Output and employment are low. Sales of goods are in small volume and at relatively low prices. Bank deposits are low. Reserve percentages are high, and the volume of currency in circulation is small.

The decline, however, brings into action forces which tend to counteract it. As trade falls off, enterprisers reduce the stocks of goods they carry for business purposes, so that ultimately a situation is reached in which such stocks (called *inventories*) are at so low a level that an improvement in the outlook of businessmen may call into existence a large demand for commodities to add to these inventories. Then the effect of costs has to be considered. Costs fall slowly in the early stages of the decline in business volume and this fact causes a diminution of profits and a further contraction of output. But as time passes and more of the factors of production become unemployed, the prices which have been paid for the services of the factors become lower. Raw materials become cheaper, wages fall, and interest lessens. The fall in costs catches up with the declining business revenue and

¹ See Chapter 14, pages 198-199, and also page 302 of the present chapter.

losses are no longer incurred by enterprisers. The fall in interest rates operates on the same lines as did the rise in interest during the boom but, of course, in the opposite direction. Banks lower their interest charges on loans, and bonds and stocks now sell at prices which mean lower yields on the purchase price. The prices of bonds and stocks rise. Since this means that finished projects can be sold to investors at higher prices, construction appears more attractive. Projects which were not feasible earlier, now become paying propositions. Enterprisers who are making profits on their current operations and those who are contemplating new construction, now increase their demand for labor and raw materials. The depression is over and industry has embarked on a new upswing.

Governing factors

(1) First among controlling factors should be mentioned the *principle of acceleration of derived demand*, a term which can be ignored for purposes other than identification. It can be explained by example. Let us suppose that textile machines of a certain kind last for ten years. A small fluctuation in the demand for the product of these machines will be reflected in a much greater fluctuation in the demand for new machines. If in any year the demand for textile goods falls to ninety per cent of normal, no new machines whatever will be required because the smaller demand can be satisfied for a year by using the old machines. If the demand falls more than this amount, then not only will no new machines be needed but some of the old machines will not be used. On the other hand, if the demand for textile goods rises in another year to one hundred and ten per cent of normal, twice as many machines as usual must be manufactured. The usual ten per cent must be constructed to replace those worn out during the year and an additional ten per cent must

be completed to satisfy the expanded demand for the product.

(2) Another important factor is the *rate of interest*. The significance of this has been mentioned in the preceding section.

A low interest rate reduces the cost of loans from banks for current business purposes, such as carrying inventories and customers' accounts. It also has the effect of causing many business projects to become profitable which at higher rates were unprofitable, so that considerable new construction is undertaken. An enterprise which, on the basis of current estimates regarding production costs and selling prices, is calculated to yield a return of \$100,000 will be worth \$2,000,000, if the prevailing rate of capitalization is five per cent. It will be worth only \$1,000,000 if it is capitalized at ten per cent. If its construction is estimated to cost \$1,500,000, it is a very attractive project to a businessman when interest is five per cent, whereas it will be most unattractive at a time when interest becomes ten per cent. A rise in interest rates operates similarly, although of course in the opposite direction. Many enterprises which are estimated to be profitable at a low interest rate become unprofitable when the rate of interest increases.

Interest tends to fall along with other costs as the depression progresses, because capital and other factors of production are in oversupply under depression conditions. The policy of reserve banks in lowering interest rates when business declines (to which reference was made in Chapter 19) represents an attempt to increase the effectiveness of this factor in promoting recovery.

(3) The *supply of money* and the *velocity*, or rate at which people spend money, must be considered also. If a considerable amount of money has been idle hitherto, in bank deposits or otherwise, the offer of it in exchange for investments has the effect of raising the price of investments,

that is, of lowering interest rates. The offer of money in exchange for goods increases the prices of goods or, in other words, raises the price level. Such a process of bringing idle money into use is called *dishoarding*. The opposite process of taking money from circulation to place it in private hoards or in idle bank deposits is called *hoarding*.

Once the turning point of a depression has been reached, to the money that is dishoarded is added the *additional bank deposits* which are created in connection with loans made by banks to businessmen to finance additions to inventories and new construction of various kinds.² The aspect of government finance has to be considered also, since the government may spend new money and newly created bank deposits for *pump-priming* purposes, as is explained later. All these add to the amount of money which is being spent. On the other hand, the amount of money is reduced in the contraction period of the cycle by hoarding and the destruction of bank deposits, by the repayment of loans which have been made to private individuals or to the government without new loans being granted. How the national income is expanded and contracted by these changes is illustrated in Figure 19.

The possibility of using government monetary and fiscal policy³ to control the volume of business and of the national income has received a great deal of attention in recent years. So long as private enterprisers expect business conditions to worsen, there is no inducement to them to dishoard or to borrow from the banks for production purposes. In fact, the inducement is in the opposite direction because if prices are falling there is an advantage in postponing spending as far as possible. It is in this situation that government spending

² Commercial banks ordinarily do not finance construction for a long period but they grant loans to contractors and others, pending payment being made from funds furnished by long-term investors.

³ Policy pertaining to the public treasury, that is, taxes, borrowing and expenditure.

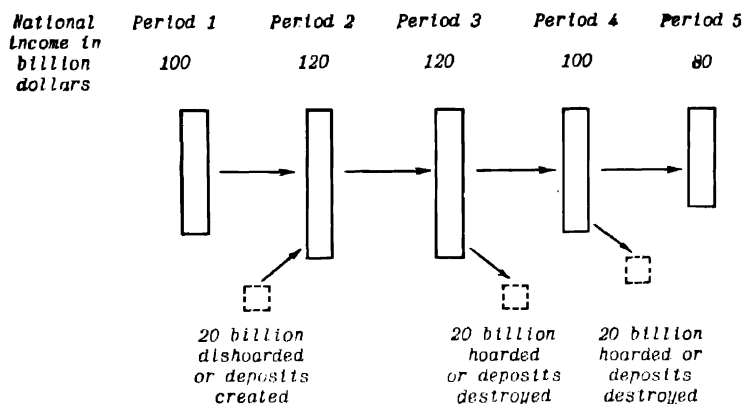


FIGURE 19. MONETARY CHANGES AND THE NATIONAL INCOME

may be exceedingly useful in checking the decline and bringing about recovery. An *unbalanced government budget*, with expenditure in excess of income and the difference made up by printing money and borrowing from banks, seems desirable in such circumstances. Government expenditure on relief and other purposes is not enough in itself. If the money required by this expenditure is raised, in taxes or loans *from individuals who otherwise would spend the money themselves*, obviously there is no addition to the amount of money being spent. If the government can get money, by taxes or loans *from people who otherwise would leave it unspent*, then spending is increased, as it is if the government prints the money or obtains it in the form of bank deposits created in connection with government borrowing.

Sometimes government expenditure of this kind is called *pump-priming* because it is undertaken at a time when private spending is insufficient, with the intention of so affecting business conditions that private spending is induced

to come in, when the pump-priming can be stopped. Thus the situation is similar to that obtaining when an old-fashioned hand pump had to be started by pouring a small quantity of water into it in order that the valves might operate and enable the pumping to proceed without further addition of water.

An overbalanced government budget, that is, one resulting from the government's taking in more money through taxes than is being paid out through government expenditure, has an opposite effect. If the government is using the proceeds of taxes to cancel some of its paper currency or to repay bank loans, without the granting of new loans by the banks to other borrowers, the volume of business and the national income will be contracted, as it was between Periods 3 and 4 and between Periods 4 and 5 in Figure 19.

Only experience can show how far pump-priming will prove effective. During the period of heavy government spending in this country in the middle 1930's, fears were expressed by some observers that the measures were doing harm in another direction by frightening private capitalists so that they reduced their own expenditures. If this should occur, obviously the increased government spending would be to this extent offset by diminished private spending. The government could step into the gap by spending still more, by increasing the construction of things like roads and buildings in response to government orders. Such a development would mean that more of the capital equipment of the country would become owned by the government and less by private individuals than otherwise would be the case. If private enterprisers were completely frightened off, this trend would lead to widespread government ownership, that is, to socialism. On the other hand, it must be remembered that if private enterprisers are assured that government spending will come forward in sufficient amounts whenever it is

necessary to maintain the volume of business and the national income, there is no need for them to be frightened. Confidence in private enterprise may *grow* rather than decline, so that less government spending rather than more may be required.

Other factors

Some economists have stressed the importance of other factors in connection with the business cycle, such as the mass psychology which leads to waves of optimism. New inventions also are said to play a part. Business upswings are in many cases associated with the widespread adoption of some new product, such as the automobile. In view of the manner in which the cycle is tied up with new construction, this is to be expected.

Is the cycle necessary?

It is said sometimes that the cycle is an inevitable part of economic progress itself, that it is part of the price we have to pay for progress. If they were convinced of this, probably few Americans would grumble for long about the price, because they recognize that in spite of depressions America is better off than many other countries. Certainly progress is linked with capital construction and this in the past has shown considerable periodic fluctuation. Probably it is inevitable that progress is accompanied by a certain amount of friction but it is not apparent that this need be of the magnitude displayed by the more serious slumps of past years.

IRREGULAR MOVEMENTS

Major fluctuations in business are caused by other factors also. Every great war has stimulated business and led to prosperity, a situation which is understandable in the light of what was said in the last section concerning the effect of

government and other spending on the volume of business and the national income. An important strike of workers in industry, mining or transportation upsets business considerably. Mineral deposits become exhausted. Localities rise or decline in prosperity according to shifts in comparative advantage.

The situation in a mining area whose deposits are running out may be examined for purposes of illustration. Labor in such an area receives low wages or, if the wage scale is maintained by insistence on a national minimum, workers become unemployed. The surplus workers move away, one leaving before another according to who is laid off first, the importance attached to a high wage or to local friendships, or to opportunities for children. Often the old workers remain while the young move afieid. As buildings and machines wear out, they are not replaced, for the available revenue is used to purchase machines for use elsewhere. Some machines which are not worn out are shipped to other districts. Even buildings may be torn down and their more valuable or more easily removable parts transported away. Sites which commanded high rents during the period of local prosperity lose a large proportion of their value. The process may be cumulative, as the local government bodies in the declining area may increase taxes on the enterprises which remain in operation and so hasten their closing down also. This point has been mentioned already in connection with rent.

NET EFFECT OF THE FACTORS

Just as in dynamics we find that the observed movement of a body often is the result of a number of forces, each of which may operate to pull the body in a different direction, so with business. Superimposed on an upward trend, a cyclical depression will be less severe than would be the case if the underlying trend is downward. A boom will be more marked

when the trend is rising than it would be with a falling trend. The factors influence each other in many ways. A fairly simple example of the manner in which effects are combined was seen in the late 1930's. A pronounced cyclical slump apparently took place in 1937-1938 but as a world phenomenon it was superimposed on an upward movement which was connected with government expenditure in Europe for war preparation, so that the depression was not marked and soon conditions were prosperous again.

SUMMARY

Several types of business movement can be identified. Long-term trends connected with population changes, seasonal movements and the so-called business cycle are recognized, as are irregular fluctuations of various kinds. Each of these is examined, special attention being given to the business cycle.

The course of the cycle is described and some of the major governing factors are studied, including the principle of acceleration of derived demand, the rate of interest and the volume of money being spent. The use of government fiscal and monetary policy to control depressions is considered.

EXERCISE

Ask your librarian for a file of local newspapers relating to 1932. Look over some of the items of business news and the advertisement columns.

PROBLEMS

1. The taxi industry sells rides in cars. The automobile industry manufactures cars. The machine-tool industry makes tools and machines to produce cars. List these three industries in order of the degree to which you expect them to be

affected by the business cycle, mentioning your reason in each case.

2. Some years ago, a well-known flour-milling company moved machines from a mill it owned in Minneapolis to a new mill it was building in Illinois, leaving the Minneapolis mill only partly occupied. Why do you think this may have been done?

3. The city authorities of a summer vacation center are considering offering subsidies to a few small manufacturers to induce them to locate nearby for the purpose of furnishing work for the residents in winter. What do you think are the advantages and disadvantages of such a proposal? What kind of industries do you think might be considered?

NOTE ON FACTOR-PRICES AND THE VOLUME OF BUSINESS

On page 185, something was said about the relation between wages and the volume of business. Under conditions of less than full employment, wage increases tend to increase enterprisers' sales volumes and if not carried to a point where business becomes unprofitable they tend to expand the volume of employment. Many economists believe that this is less true of interest, rent and profits, because these are more likely to be hoarded, as hoarding is defined in this chapter. Certainly a greater portion of interest, rent and profits is saved than is the case with wages, and savings tend to be hoarded when the outlook for profitable business appears bad. Savings which are invested in capital goods, like buildings and machines, are just as effective as are wages in maintaining the volume of business. There is some hoarding, even out of wages, and this appears to increase as wages rise.

INTERREGIONAL AND INTERNATIONAL TRADE

TRADE BETWEEN ONE REGION AND ANOTHER

Why trade exists

If every district had a similar climate, and natural resources like soils and minerals were distributed evenly over the earth's surface, there would be little need for trade between the different regions. The people of every locality could produce at home what they needed, just as well as they could get it from elsewhere, and of course by doing so they would save the cost of transportation.

Obviously, this is not the case in practice. There are such wide variations in climate that it is only by dint of constructing at great expense the necessary conditions for an artificial climate that plants requiring considerable warmth can be grown for exhibition purposes in the botanical gardens of the north. Coal cannot be mined where no seams of this mineral exist. Hence, in the absence of trade with other districts, a northern territory would produce in greenhouses only the small amount of tropical fruit which its richer inhabitants were willing to buy at high prices, while a country which possesses no coal would contain only the population and industry that could be supported on fuel from forest and similar sources.

The world has avoided this situation by developing trade between the various areas. A simple example will serve to illustrate how such trade arises. People who live in coastal villages, where stony soil and strong winds combine to render the land unsuitable for agriculture, are excellently placed

for fishing, and so they begin to exchange the fish they catch for produce from inland districts. Their labor becomes specialized, with all the resulting advantages which were described in Chapter 3, so that a resident in a fishing village is able to catch more fish than a farmer could if he came to the coast for such a purpose. On the other hand, those who live inland become more skillful farmers. In this way, trade benefits both parties. The farmers find that they can get more fish, by growing potatoes and exchanging some of these for fish, than they could obtain if they were to repair to the coast every few days in order to fish. The residents of the fishing villages, for their part, find that they can obtain more potatoes for the same effort, by catching fish and exchanging it with the farmers for some of their produce, than they could by planting potatoes for themselves.

The law of comparative advantage

This gives us what in economics is called the *law of comparative advantage*. A group or nation will specialize in producing those goods in which its advantage is greater or its disadvantage less, as compared with other groups or nations, exchanging these goods for the products of other areas, which have a greater advantage or a less disadvantage in producing these other products. Comparative advantage, therefore, means either a greater advantage or a smaller disadvantage.

There are two conceivable cases. In one of them, each of the trading groups has an advantage in producing one of the commodities. Thus, in the farmer-fisherman example mentioned in the preceding section, we can imagine that those who live in the seaside village are more effective in producing fish than the people of the inland village, but that the dwellers of the inland center have an advantage in producing potatoes. It is easy to see that trade is likely to arise in this situation.

The second case is less simple. We may suppose that the individuals who live in the seaside village are more efficient in producing both commodities than are those who reside in the inland community. If the advantage of the seaside dwellers is equally great in two commodities, for instance if they produce both fish and potatoes with half the labor required by the inland villagers, there would be no trade. But if the coastal villagers have a greater advantage in producing one commodity than in producing the other, then trade would be beneficial. The seaside residents may be able to produce twice as many potatoes as their inland neighbors but, if they can produce three times as many fish, they are better engaged in fishing than in potato growing. Similarly with the inland residents. They can produce only one-half as many potatoes as their seaside neighbors but even less fish—one third. So it would be better for them to concentrate on potatoes. They have less disadvantage in this product.

The terms of trade

In such a situation, what governs the ratio of exchange? What decides how many pounds of potatoes must be given for so much fish, and vice-versa?

Clearly the fishermen will not be willing to spend more effort in catching fish which are to be given to the farmers in exchange for potatoes than they would require to grow potatoes for themselves. For instance, if fifty pounds of potatoes can be produced for each day's labor which the fishermen spend in potato growing while in a day they can catch ten pounds of fish, then they will be unwilling to give more than ten pounds of fish in exchange for fifty pounds of potatoes. If the farmers, on the other hand, can catch five pounds of fish in a day spent at the seaside, while they can grow a hundred pounds of potatoes with this amount of

labor, they will not be agreeable to accept less than five pounds of fish in exchange for a hundred pounds of potatoes. Thus we reach the conclusion that *comparative costs set limits to the ratio of exchange*. Neither party will give more for a commodity in trade than it would cost him to produce it himself. In the example, the limits are rather wide. The fishermen's limit is ten pounds of fish for fifty pounds of potatoes, that is, a pound of fish for five pounds of potatoes. The farmers' limit is five pounds of fish for a hundred pounds of potatoes, a pound of fish for twenty pounds of potatoes. Between these limits, no doubt bargaining would set the ratio of exchange. But in practice elasticities of supply and demand have to be considered, an aspect which has been ignored in the illustration, and what has been learned regarding supply and demand in earlier chapters must be brought in.

As in all markets, *the ratio of exchange* (or quantity of one commodity which has to be given for the other) *has to be such that demand and supply are equalized*. In the case we are considering, the ratio of exchange has to be that where all the fish which is offered by specialist fishermen to farmers in exchange for potatoes is taken by the latter, while all the potatoes offered at this ratio are accepted by the fishermen. If, for example, at a ratio of a pound of fish for eight pounds of potatoes there are some unsatisfied potato growers, who would like to exchange their product for fish at this ratio but cannot find fishermen willing to exchange in the opposite direction, the offering of additional potatoes by these growers will alter the ratio, perhaps to a pound of fish for ten pounds of potatoes, where we may suppose supply and demand to be equal. Similarly on the other side of the equilibrium ratio, if bargaining started on the basis of a pound of fish for twelve pounds of potatoes, the offering of

fish by fishermen unable to find customers at this ratio would cause the ratio to shift to the one-to-ten ratio at which demand and supply are supposed equal.

The example, although simple so far, is unreal. It is extremely unlikely that all the fishermen are so situated that their relative efficiency in producing fish and potatoes is the same, and that the farmers are in the same position. Probably, long before potatoes become so dear that only five pounds can be obtained in exchange for a pound of fish, some of those who reside in the fishing village will take to growing potatoes. Here is a man who owns a relatively fertile piece of land or who likes gardening. There is one who has lost his boat or who easily becomes seasick. One of these men may take up potato growing when fifteen pounds of potatoes will bring a pound of fish in the market. The other gives up the sea when ten pounds of potatoes are worth as much as a pound of fish. Then in the farming village there is an individual who enjoys the sea, another who has a crippled leg that reduces his usefulness in potato growing but is not much disadvantage in fishing, a third whose soil is inferior. One of these begins to fish regularly when a pound of fish brings sixteen pounds of potatoes, another twelve pounds, the third eight. Such points as these are what lie behind the demand and supply schedules which determine what the ratio of exchange is to be. At the ten-to-one ratio which we have supposed to equalize demand and supply, those inland villagers whose production conditions are such that, if necessary, they are willing to give ten pounds or more of potatoes in order to obtain a pound of fish (the sixteen- and twelve-pound men who have been mentioned, for example) specialize in growing potatoes. Those who are unable or unwilling to produce potatoes as a means of getting fish at this ratio do their own fishing. Similarly in the seaside vil-

lage, at a ten-to-one ratio those who think it to their advantage to grow potatoes do so and those who consider it better to catch fish engage in this pursuit.

The same situation exists in international trade; but in that field matters are complicated by the fact that in the exchange process a value has to be set on foreign money, so not until the chapter on foreign exchange has been studied can the factors which equalize the demand for and the supply of goods in foreign trade be understood fully.

Who gets the benefit of trade?

If we continue our example in its earlier and somewhat unreal form, where all the farmers were alike in their preferences, as were all the fishermen, we can conclude that either group may receive the entire benefit from trade or the gain may be divided between the two. Thus, if the farmers prove so adamant that, in spite of all the arguments of the fishermen or the threats they make regarding their withdrawal from the market, the fishermen have to agree to give a pound of fish for each five pounds of potatoes, the farmers will receive the entire benefit. The fishermen will gain nothing and may just as well grow their own potatoes. If the opposite circumstances apply, so that the farmers have to give twenty pounds of potatoes for every pound of fish they obtain from the obdurate fishermen, the farmers will gain nothing and will do as well to catch fish for themselves. All the gain will go to the fishermen. But if bargaining results in a potato-fish ratio between these two extremes the gain will be divided.

In the more realistic situation in which it is recognized that the various individuals in the two groups are placed differently, some will gain more than others, whatever be the exchange ratio. Thus, if the forces of supply and demand

cause the ratio of exchange in the market to be just below ten pounds of potatoes to a pound of fish, the resident of the fishing village whom we assumed would prefer to grow potatoes at a ten-to-one ratio presumably is indifferent as to which commodity he produces. He is the marginal villager who, for practical purposes it can be assumed will gain nothing by trade. His fellow-villagers who have less desire than he to grow potatoes will gain. On the other hand, in the farming village, the individual who is indifferent around a sixteen-to-one ratio gains considerably by specializing in potato growing at ten-to-one, and he who is indifferent around twelve-to-one gains also. But the third man we mentioned, who preferred to fish so long as a pound of fish brought as many as eight pounds of potatoes, has at the ten-pound ratio no doubt on the matter. He will lose by specializing in farming, so he does not trade potatoes for fish. He fishes instead.

WHY SPECIALIZATION IS INCOMPLETE

Here we have seen one explanation of the phenomenon that often specialization is incomplete. Connecticut is excellent for manufacturing in some ways and not very suitable for wheat growing. North Dakota has advantages in wheat production and is not particularly suited to manufacture. Yet there are some wheat fields in Connecticut and a number of factories in North Dakota. What are the reasons for this?

The cost of transportation

Obviously, the advantage which one area has over another must be at least enough to pay the cost of transportation or there will be no trade. Hence, trade over long distances will be in commodities which are valuable in comparison with their weight and bulk. Goods which are cheap and bulky will not be transported very far. Thus, wool is shipped from

one side of the world to another, as is machinery, but coal and potatoes are not carried great distances. In practice, water transport is much cheaper than land transport, so that coal mines situated near the sea may send their product much longer distances than other mines. If our farming-fishing example were more realistic, probably we should find that milk and fresh vegetables were produced in the fishing village, while commodities like wheat or wool were obtained from the farmers.

Diminishing returns

Next should be mentioned the factor of diminishing returns. As land and other natural resources are used more intensively, by employing more capital and labor in the same area, and the margin of exploitation is extended so that poorer soil and inferior mineral seams are worked, the return per unit of cost falls off. Or, to put the point the other way round, the costs per unit of output rise. In these circumstances, some specialization may be very advantageous and yet in due course a point is reached where there are no further gains from specialization. This is where specialization ceases. In our illustration, we may imagine that the coastal villagers specialize in fishing to the point at which occasional inhabitants, who have particularly good pieces of soil or who like to work the land, begin to prefer potatoes. The agricultural village is in the same position. Specialization does not extend beyond the point at which some of the residents, for one reason or another, show a preference for fishing. Stated in the phraseology of economics, *specialization extends to the point where to the marginal producers the sacrifices or costs involved in producing one commodity are as great as those required to produce the other, allowing for the cost of transportation*. In the case of international trade, the taxes which commonly are levied by the government on

goods entering the country have to be regarded as additions to the cost of transportation in applying the principle, as will be seen later. Which producers are the marginal ones depends on the ratio of exchange. The ten-pound man in our example was the marginal producer who was indifferent between the two products that we had under consideration because it was at a ten-to-one ratio that demand and supply were assumed equal.

Just as specialization is limited by the factor of diminishing returns, so the opposite situation of increasing returns, where costs fall as output rises, operates to extend specialization. Where this condition applies, what is initially only a small degree of specialization may be extended greatly as time goes on. This point is studied later in connection with the protection of infant industries.

Personal and group factors

Knowledge may be lacking regarding the advantages of trade, so that a group of people in an area or country produce for themselves a commodity which they could obtain cheaper elsewhere. This is the situation which is exploited by enterprisers who, judging it aright, import the goods and sell them at a profit. Then race, language or prejudice may lead people to produce what they want for themselves rather than specialize in one field and bargain the product for those of other groups.

Political and legal barriers

Trade may be forbidden by law or restricted, so that only part of the total which consumers require is permitted to be brought from elsewhere. Formerly this occurred to some extent in trade within a country, or internal trade, but now it is confined largely to international trade, or trade between different countries.

Tariffs

Taxes are imposed on goods entering a country. Practically all countries have extensive lists of such taxes, called *tariffs*, or *customs tariffs*. They cover a multitude of goods, commonly arranged in classes, with different tax rates applicable to each class. A tax on imports is like a corresponding addition to the cost of transportation. Its existence either reduces the return to the foreign exporter of the goods, increases the cost to the home importer, or does both of these. Where such a tax exists and yet the commodity which is taxed moves into the country, it follows that its price outside the tariff barrier is less than that inside by the amount of the tariff, aside from transportation costs. The question of who bears the tax is dealt with in connection with the general problem of who bears taxes of all kinds, treated in Chapter 24.

Economists usually oppose tariffs on the ground that they deny to the country which imposes them, and to other countries with which it might trade, the advantages of specializing in producing the goods for which they are most fitted. Carried to an extreme point, they would prevent trade altogether, so that every country would have to produce whatever its people want to consume. For instance, in our fisherman-farmer example, supposing there is a frontier between the two villages so that they are in different countries, a sufficiently high tariff will force the fishermen to grow their own potatoes and the farmers to catch whatever fish they want to consume. Despite this objection, tariffs are the general rule.

REASONS FOR TARIFFS

Revenue

Most newly settled countries raise a considerable proportion of government revenue from import taxes. One reason

for this is that manufactured goods are being imported through the ports and the imposition of a tax on these goods spreads the cost of government over a large percentage of the people. Such a tax is cheap to collect, also, and does not require an elaborate internal revenue organization. Even after the tariff has ceased to be the primary revenue-collecting device, it may be used to secure revenue from particular articles, especially imported luxuries. And few finance ministers regard it as objectionable that tariffs imposed primarily for other purposes bring in a certain amount of revenue. Two birds with one stone are as acceptable in this field as in others.

Protection of infant industries

In the United States of America, as well as in countries such as Canada, South Africa and Australia, tariffs have been employed to develop local industry. As has been explained already, they introduce a cost difference between foreign and home prices, enabling the home manufacturers to sell their product at a higher price than otherwise might be the case. Frequently, this merely has the effect that home enterprisers are induced to produce a commodity which in the absence of the tariff could be procured more advantageously abroad. But there are exceptions. Let us consider the case of an industry in which the benefits of mass production are great, for example, the iron and steel industry. It may occur that the home country has deposits of coal and access to iron and yet its production of pig iron and steel is costly because of the small scale of operations. Such a country probably will import iron and steel from another country which is less favored in regard to natural resources but where the industry has been established longer and has grown to a larger scale. (The United States was situated somewhat like this in relation to the European iron and steel industry at the beginning

of the nineteenth century.) If such a country imposes a tax on imports of iron and steel, sufficiently high to enable a local industry to get started, the economies of increased size later may enable the tax to be removed and the industry to continue on a competitive basis. To justify such a tax, evidently not only must the industry thus protected give promise of being able to exist without a tariff later, it must be likely to produce at a sufficiently low cost later to recoup the losses imposed on the consumers by the tax in the early stage. If so, the tariff is justified.

Two objections have been advanced against such tariffs. First, it is difficult, if not impossible, to ascertain beforehand which industries are likely to develop to a stage that justifies their early protection. Second, experience has shown that those associated with a protected industry offer strong opposition to the removal of a tariff when the stage has been reached in which the industry is able to stand by itself. They prefer to keep competitors out of the local market. Notwithstanding these objections, most young countries have imposed tariffs on this ground.

Self-sufficiency

A predominantly agricultural country may wish to foster manufactures for the purpose of becoming more self-sufficient, or a manufacturing country may protect its agriculture for the same reason. Evidently, self-sufficiency denies to the country which achieves it the advantages of international specialization in production, but it is advocated commonly as a security measure in the event of war. Thus, in England, where the great bulk of the wheat required has long been imported, some years ago an agitation grew up for protection to wheat farmers for the purpose of insuring an adequate food supply in wartime. At times, concentration on a single product has had serious effects, when the demand has shifted away from

the commodity concerned. Thus Chile suffered badly when the nitrate industry, on which she had relied very largely, had to meet the competition of synthetic nitrogen compounds manufactured elsewhere.

A balanced economy

The fate of the Chilean nitrate industry, and comparable experiences in other countries, sometimes have led people to advocate the use of protection to secure a more balanced and therefore more stable home industry. South Africa, which in the past fifty years has depended largely on gold mining, has for some years pursued a vigorous policy of manufacturing development, based on a tariff on imports, with a view to avoiding collapse when the gold mines become empty or the world ceases to want gold. Other arguments are employed, such as that the people of a country cannot develop themselves fully unless industries of various types are available, affording opportunities for different skills and tastes.

Unbalanced foreign exchanges

With the automatic gold standard of the period before the First World War, unbalanced exchanges resulted in price movements which brought the exchanges into balance again. When a country's price level was higher than that of other countries, its exports fell off and its imports increased, so that the foreign exchange rate moved to the point where gold moved out. Loss of gold lowered the price level and helped to raise prices elsewhere. Thus an adjustment was attained. But when the gold standard came to be managed or was abandoned altogether, frequently governments wished to avoid the necessity for a fall in the price level when the foreign exchange was unbalanced. Declining prices were unpopular because they caused business depression. Hence other methods had to be found for dealing with a situation in

which imports exceeded exports. Tariffs were used widely for this purpose.

THE MIGRATION OF THE FACTORS OF PRODUCTION

It would be wrong to conclude a discussion of interregional and international trade without mentioning the flow of capital and labor between the different areas. Sometimes international trade is discussed on the basis of an assumption that capital and labor have to remain where they are. In the case of the fisherman-farmer example used earlier in this chapter, it may be that the fishing village is so well endowed by nature that its residents can produce either fish or potatoes more effectively than can the inland villagers. In this case, and supposing that the inland villagers are compelled to stay where they are, they specialize in potatoes if their disadvantage is less with this product than it would be with fish. But if they are able to move and have no special reasons for staying where they are, they can improve their income position by moving to the fishing village. No doubt some will do so. Aside from other factors, which are discussed elsewhere, we can say that capital and labor will flow from the inland village to the seaside settlement until the operation of the law of diminishing returns brings the marginal products of the factors to equality.

Although it has been pointed out that other factors have been at work in regard to migration than merely differences in rewards between the several areas, undoubtedly this aspect has had considerable influence. Many workers have moved across the Atlantic from Europe because of an income difference and the same is true of capital. Much capital came to this country in the period before about 1900 because returns on capital were higher in America than in the older countries of Europe.

Such a movement of capital and labor has the effect of

lessening the differences in the rewards obtainable by these factors of production in the areas concerned. Wages and interest tended to be higher in Europe because of the migration of capital and labor to America and other young countries, while in the young countries themselves wages and interest tended to become lower. The widespread realization of this fact explains such developments as the opposition of labor groups in the young countries to immigration and the support given by labor interests in Europe to the idea of restricting capital exports. A true internationalism would remove barriers of all kinds, whether to the movement of goods, capital or people, so that no factor of production need be employed anywhere under conditions which could be bettered elsewhere.

SUMMARY

If natural resources were evenly distributed over the world's surface, there would be no need for interregional trade. But this is not the case in practice. Hence those who reside in one area tend to concentrate on producing goods for which they have a relative advantage and exchange these goods for others, in the production of which people elsewhere are relatively more fitted. In spite of these advantages of trade, governments have restricted it for various reasons, the more important of which are examined briefly. Finally, movements of the productive factors themselves are considered.

EXERCISE

Ask your librarian to refer you to a publication which gives recent information on America's imports and exports. Look at the more important items and note the kind of goods concerned.

PROBLEMS

1. Suppose Canada produces wheat for half the labor per bushel that is required in the United States and that she produces steel for one-and-a-half times the labor required in this country. Aside from other commodities, what will be the nature of trade between the two countries?

2. Suppose that Canada produces wheat for one-and-a-quarter times the labor required in the United States, while she produces steel for one-and-a-half times the labor needed here. Will trade remain the same as in the first problem or will it be different? Why?

3. Is the answer given to the second problem affected by whether or not it is assumed that labor can move between the two countries? If so, in what way is it affected?

FOREIGN EXCHANGE

THE MARKET FOR FOREIGN MONEY

The nature of the market

Trade between countries which have different monetary systems requires a mechanism for exchanging one money for another. This is provided by the foreign exchange market. Dealings in foreign money do not take place in a special building. Banks, importers and exporters and their agents, shipping companies and other organizations which have international business dealings, are in touch with each other by mail and telephone, while the cable links them with overseas centers. In this manner, deals are arranged. What is dealt in, for the most part, is the foreign bill of exchange or draft which, in appearance and purpose, is rather like a bank check. In the draft, an individual or organization with claims on foreign money instructs another individual or organization abroad to pay a certain amount of this foreign money. When we buy British pounds in New York, ordinarily what we get are not British pound notes but a draft which orders a British bank to transfer to our nominee a bank deposit in London. Similarly, the dollars which are sold in London are not currency but drafts calling for the transfer of bank balances in New York. In every country what happens in the foreign exchange market is that people buy and sell deposits in foreign banks, foreign in the sense that they are in other countries than that in which the market is situated.

Sources of demand and supply

An important source of foreign bank deposits is to be found in this country's exports. Either the foreign buyers of these goods have agreed to pay for the goods in their own money, in which case the exporter will have to offer it for sale in exchange for dollars in the foreign exchange market if he is to receive payment in American currency, or else the foreign buyers have contracted to pay in dollars.

The chief demand for foreign money comes from imports to this country. If the foreigners who have shipped these goods here take payment in dollars, they must sell the dollars for foreign money to receive their own currency. Similarly, if Americans who have imported the goods have agreed to pay for them in foreign currency, dollars will have to be offered in exchange for foreign money.

There are other sources of foreign money besides American exports. Foreigners offer it for sale in exchange for the dollars which they spend when visiting this country or when they buy American stocks or bonds. Other sources are dividends and interest paid on investments in foreign countries, owned by persons resident in the United States.

The demand for foreign money includes, besides goods imported into this country, the money which Americans spend on trips abroad, remittances sent by immigrants who have come to this country to relatives left behind in their old homes, money which Americans want to invest in foreign countries, dividends and interest on investments here which are owned by persons who reside abroad.

Capital exports and imports

Frequently, in discussing foreign exchange, it is forgotten that a loan of money to someone in a foreign country, which is to be spent abroad and is called an *export of capital*, has an effect on the foreign exchange market which is precisely

opposite to that of an export of goods. An export of capital from the United States leads to an offer of dollars in exchange for foreign money. An export of goods, as has been pointed out, causes an offer of foreign money in exchange for dollars, or what comes to the same thing, a demand for dollars in exchange for foreign money. Exports of capital are like imports of goods in this respect. Imports of capital resemble exports of goods because both of them lead to an offer of foreign money in exchange for dollars. However, in the case of capital exports and imports, it must be borne in mind that later there will be interest payments and principal repayments which will operate in the reverse direction.

Short-term capital movements are always taking place when banks, in their foreign exchange dealings, allow their deposits or their borrowings abroad to increase or diminish. As will be seen later, this is an important factor in stabilizing the day-to-day movements of foreign exchange rates.

Balancing demand and supply

If the two sides, supply and demand, are equal at a particular exchange rate, say four dollars to a pound of British money, banks can use the funds offered by each group to satisfy the other. Let us say that on one particular day four million dollars are offered by Americans in exchange for pounds, while Britishers offer a million pounds in exchange for dollars. The dollars that Americans offer, in the form of balances in American banks, are sold to the Britishers who want to purchase dollars. The British pounds, representing balances in British banks, are transferred to the Americans who desire pounds. In this case, it is clear that neither dollars nor pounds have moved. All that has occurred is that dollar balances in American banks and pound balances in British banks have changed ownership. This result accords with common sense. Aside from occasional use of dollar bills by

people abroad who have ceased to trust their own money, the only country where American dollars can be spent is the United States¹, just as the only place where one can spend British pounds is in Britain itself.

In practice, dealings in foreign exchange are often complicated. Apart from the possibility that the two sides may not be equal in any short period, aside from short-term capital movements which make them equal, there is the fact that dealings affecting the dollar-pound exchange are not confined to New York and London. Some take place in other centers such as Montreal, Paris and Rio de Janeiro. Also, exchanges may be very roundabout, e.g., when American dollars are sold for Canadian dollars and these for British pounds, or American dollars are sold for Brazilian milreis, the milreis for French francs, and the francs for British pounds.

FOREIGN EXCHANGE UNDER FIXED EXCHANGE RATE CONDITIONS

The gold standard

As was pointed out in Chapter 17, one of the main features of the gold standard as it existed before the First World War was that it ensured fixed rates of exchange between the moneys of the countries which adopted it. Thus, the British pound contained 113.0016 grains of gold and the United States dollar 23.22 grains, making the gold content of the two moneys such that one pound equalled 4.8665 dollars. The exchange rate obtained in this way of comparing gold contents is called the *gold parity*, or *mint par of exchange*.

Gold points

Now if it happened, on any particular day, that there was a bigger demand for pounds than for dollars at the prevailing price, the exchange value of the pound would rise. But so

¹ Some dollar bills are sold abroad to people who expect to travel to this country and wish to have currency on hand when they arrive.

made to equal demand at the fixed rate. The gold standard ensured this equalization of supply and demand. To take the pound-dollar example, if there were not enough dollars and too many pounds offered in the market for equalization to take place at the fixed rate, in the short run gold would flow from England to America and the dollars which it brought there would make the two sides equal. In the long run, bank reserves and price levels would be adjusted. The gold Britain lost would cause bank reserves to contract and the British price level to fall. America's gain in gold would lead to an expansion of bank reserves in the United States and a rise in the American price level. As British goods became cheaper than American, British exports would be increased and her imports diminished, while American exports would be decreased and her imports expanded. This change in the export-import balance of the two countries would diminish the demand for dollars and increase the demand for pounds. The balance would be set right because gold would flow until the two sides were equalized and would cease to flow when equalization was attained.

How can an exchange rate be kept fixed if there is no gold to bring about such adjustments? In the short run, the regulatory authority may achieve a balance, by selling foreign money which it has on hand or is able to borrow when the demand for foreign funds is in excess of the supply, and by accumulating foreign balances when the supply of foreign money is in excess of the demand. In both world wars, Britain was able to preserve a fixed exchange rate, despite a heavy demand for dollars to pay for goods purchased in the United States, by selling in New York the American investments which British citizens had acquired in peacetime.

Obviously, such sources as the disposal of previously accumulated foreign investments and the raising of loans abroad cannot be relied upon indefinitely. Resort must be

had to other measures. If foreign money continues to be scarce, tariffs and import licenses may be employed to reduce the volume of goods imported, capital exports and foreign travel by the local people may be reduced or prohibited. Canada took all these means during the Second World War to maintain the exchange value of the Canadian dollar at its pegged rate of ninety cents in American money. Or, if on the other hand the problem is one of oversupply of foreign money, as was Canada's during that war with respect to the Canadian-dollar-British-pound rate, loans which have been raised in the past in the foreign country may be repaid and new capital exports to it arranged. Canada took such steps also for the purpose of maintaining the pegged value of her dollar as compared with the British pound.²

The pegged rate can be maintained indefinitely only if the supply of and demand for foreign money can be kept in balance. Three means are apparent.

(1) Restrictions may be imposed on the imports and exports of commodities and on foreign exchange dealings, these restrictions being adjusted as may be necessary from time to time to keep the foreign exchange market in balance. Germany followed this plan in the 1930's.

(2) Capital movements may be permitted to balance the exchange market. Thus, the United States maintained a fixed exchange rate for a lengthy period of time between the two world wars, despite the fact that she was exporting more commodities and services than she imported. She exported capital, that is, she invested in foreign countries. Canada did

² In peacetime, Canada sent most of her exports to Britain and herself imported heavily from the United States. The American dollars she required to pay for her imports came from countries like India, which were in debt to Britain but had an export surplus in relation to the United States. The great reduction in British exports which took place in the war therefore led to Canada's becoming short of American dollars, although she had British pounds in excess of what she needed. This is a good example of the round-about nature of foreign trade and exchange transactions as it often exists in practice.

the same with respect to Britain in the second war, as has just been mentioned.

(3) The monetary system may be managed in the same manner as the international gold standard. If the supply of foreign money is scarce, the home price level may be reduced relative to foreign prices, by credit contraction for the purpose of stimulating exports and discouraging imports. On the other hand, if supplies of foreign money are excessive, the home price level may be raised by credit expansion, in which case exports would be reduced and imports increased.

The sterling area

The *sterling area* was developed as a system of fixed exchange rates, not based on gold and including a number of countries. When Britain abandoned the gold standard in 1931, some countries were operating gold exchange standards on the basis of local paper currencies pegged to the British pound which itself was convertible into gold. Other countries which had not a formal arrangement of this kind depended largely on balances in British banks to maintain the foreign exchange values of their currencies. When the British pound became inconvertible most of these countries continued to operate as before, although now their money was pegged to the inconvertible pound instead of to gold. This group formed what became known as the sterling area, the name being taken from the *pound sterling*, the historic name for the British pound.³ The area included Australia, South Africa, India and a number of other British and non-British countries. Exchange rates within the group did not remain unchanged in all cases: Australia, for instance, lowered the exchange value of her money against the British pound and therefore against the currencies of other countries whose

³ The name *pound sterling* was derived from the circumstance that originally the pound was a pound by weight of sterling silver. The pound continued to be called *sterling* on the foreign exchange market.

exchange rates were pegged to the pound. How could such countries as Australia and South Africa maintain fixed values for their monetary units as compared with the British pound? Obviously, by such methods as have been described, namely, imposing restrictions on trade and forcing adjustments of the local price levels whenever these were necessary for the purpose of making the supply and demand for British pounds equal at the fixed exchange rate. Always they would have in reserve the measure which Australia took in this case and which the United States took in 1934 with respect to the gold standard. They would alter the exchange value of their currency if other means of bringing about adjustment should be considered objectionable.

Classification of fixed exchange rates

In the light of what has been said in this section, we are able now to classify fixed exchange rates as follows:

<i>Currencies whose exchange rates are fixed with respect to each other</i>	<i>Examples</i>
Gold fixed against gold: the international gold standard.	America-Britain prior to 1914 and again, 1925-1931.
Gold fixed against paper: the gold exchange standard.	India and other sterling area countries, 1925-1931.
Paper fixed against paper.	Sterling area, 1931-1939

EXCHANGE RATES BETWEEN FREE STANDARDS

During and after the First World War, economists gave considerable attention to the problem of exchange rates under conditions where none of the countries concerned were on the gold standard or otherwise pegged to each other; that is, they were *free*. The *purchasing power parity principle* was developed to explain exchange rates under such con-

⁴ During the Second World War, the sterling area was pegged to the American dollar by the pegging of the pound-dollar exchange rate.

ditions. This principle stated that *free currencies would exchange against each other in ratios determined by their relative purchasing powers*. What was meant can be explained by an example. The principle laid down the rule that, if the British pound bought as much goods in England as four dollars would purchase in the United States, the pound would be worth four dollars in the foreign exchange market. As stating a tendency, obviously there is some truth in this principle. If the British pound buys as many goods as four dollars and yet in the foreign exchange market it sells for only three dollars, anyone who needs goods, and is so situated as to be able to exercise such a choice, can do better by purchasing British commodities than by buying American. For three American dollars, he can obtain a British pound, which buys as many goods as do four dollars. Hence, he will abstain from buying American goods and buy British instead. In these circumstances, Britain's exports will go up and her imports contract, America's exports will fall and her imports rise. Therefore, the demand for pounds will be greater and that for dollars less. The value of the pound will rise in the direction of the four dollars which represent its purchasing power parity. Conversely, if the pound which buys four dollars' worth of goods costs five dollars on the foreign exchange market, people will prefer not to spend pounds on British goods but will exchange them into dollars and so get more goods in America. American exports will go up and her imports down; Britain's exports will decline and her imports increase. More dollars will be wanted on the foreign exchange market and fewer pounds; so again the value of the pound will move toward the purchasing power parity.

But the argument must be carried further. It is incorrect to speak as if the causal relationship were always one in which relative price levels determine exchange rates. The truth is that the two are interdependent. Cause and effect may be

either way. If a country inflates its price level, relative to prices in other countries, in the absence of countervailing factors, the foreign exchange value of its currency will fall. Here we see the exchange rate being determined by the price level factor. On the other hand, if an exchange rate exists which is lower than is justified by relative price levels, there will be a tendency for the local price level to rise. The low rate of exchange will increase the local prices of goods which enter into international trade and therefore to some extent the general price level will rise. Hence, the purchasing power parity principle must be stated in a twofold manner. (1) *Exchange rates tend to correspond to relative price levels,* and (2) *in the event that the exchange rate and the price level are out of conformity with each other, two forces come into operation, one tending to drive the exchange rate toward the point justified by the price level and the other tending to move the price level toward that justified by the exchange rate.*

But rules of this kind can be applied only in a general way. They can represent no more than tendencies, because free currencies are apt to move widely from day to day according to current prospects regarding further price level changes and rumors of government action in the exchange market. Next, although attempts have been made to calculate purchasing power parities exactly, these have not been very satisfactory. Then domestic prices in a country from which purchasing power parities are calculated may reflect only remotely the prices of imports and exports. It is not domestic prices but the prices of imports and exports which govern the flow of international trade and therefore regulate the supply of and demand for foreign money and determine the exchange rate. Finally, what has been said concerning other exchange situations applies here. Countries which have run short of foreign money because their imports have exceeded

their exports may be able, for a time at least, to balance the supply of foreign money with its demand by imposing restrictions on imports by tariffs or other means and thereby avoid the necessity of reducing the price level relative to prices elsewhere. In such a case, the exchange rate cannot be expected to reflect the difference in price levels.

SUMMARY

The supply of foreign money comes mainly from American exports, the demand largely from imports, although capital transactions and other items play their part. The rate of exchange is that which equates supply and demand.

Under gold standard conditions, the gold points set limits to movements in the exchange rate, and the effect of gold movements on relative price levels in the various countries keeps imports and exports in balance and therefore makes possible the maintenance of a fixed exchange rate. In the absence of a gold standard, fixed rates are possible and have been important in recent years. The conditions for their maintenance are examined.

In a system of free exchange rates, price levels and rates of exchange are mutual determinants.

EXERCISES

1. Examine the commercial and financial pages of newspapers available to you to see if you can find a report on the foreign exchange market. Read this.

2. Ask the foreign department of a large bank, if one is accessible, to let you see one of the draft blanks used when foreign money is sold to customers. Even a small bank may have American Express Company blanks. Compare the blank with a check used for local payments.

PROBLEMS

1. During the Second World War, the British pound was fixed at slightly above four dollars in American money, in spite of the fact that Britain was exporting very few goods and needed large amounts of American money to pay for war materials bought in this country. Enumerate the measures which you think the British government might be expected to have taken to make the fixed rate possible.

2. Suppose that an American firm of investment bankers sells a large bond issue in New York on behalf of the Brazilian government, the money to be spent in America on railroad equipment to be shipped to Brazil. What do you expect to be the effect on the value of Brazilian money as compared with American dollars on the foreign exchange market and why?

3. Suppose that the money obtained from the sale of bonds referred to in Question 2 were to be used in Brazil to construct roads. What would be the effect on the value of Brazilian money as against dollars and why?

CHAPTER 24

THE GOVERNMENT ECONOMY: EXPENDITURE, TAXATION, BORROWING

In medieval England, the king was expected to "live off his own," that is, to pay the expenses of government out of his own resources. He was able to do this because he owned large estates. In modern America, the federal government and the governments of the states perform the same functions as the English king in the middle ages, but certainly American governments do not live off their own. They raise enormous sums from the citizens by taxation and other method. In this chapter, we have to consider the economy of the government, what its functions are, what it spends, how its revenue is raised.

THE FUNCTIONS OF GOVERNMENT

The principle of maximum satisfaction

The functions of government are discussed in broad outline in Chapter 2. In that chapter, America was classified as a mixed economy, in the sense that its economy contains elements of free enterprise and also of government control. When it is asked where enterprise should be free and where there should be control by the government, various answers are given. Those economists who are impressed by the utility analysis say that the plan which yields the highest utility or satisfaction to the people is to be preferred, remembering that satisfaction is twofold, because the benefit resulting from consumption and the sacrifices involved in production both have to be considered.

Yet it is very much easier to prescribe this rule than to apply it since satisfaction cannot be measured in such a manner as is necessary for the rule to be usable. An individual, who is faced with a choice between alternatives, may be able to form a reasonably settled view as to which is likely to afford him the greater satisfaction. But very often the problem goes further than this and becomes one of whether or not the satisfaction conferred on one person is more than outweighed by the dissatisfaction given to another. Since neither of the people concerned can put himself in the place of the other, nor the government put itself in the place of either, the difficulty appears to be insoluble. No means are available for measuring satisfaction received by separate individuals so as to be comparable with each other.

Judgment by results

We may employ the deductive method of reasoning described in Chapter 1. Assuming that two individuals are alike basically, notwithstanding that one is rich and the other poor, we draw from the principle of diminishing utility the conclusion that the thousandth dollar of the rich man's monthly budget brings him less satisfaction than does the poor man's fiftieth dollar, so we tax the rich man for the purpose of subsidizing the poorer one. Then we apply the test of experience. The results are examined. If the rich man is seen to be smoking fewer cigars, drinking less liquor, and working more than before, while the poor one feeds himself better and gives his children more education, we feel satisfied. We remember that reformers tell us that cigars and liquor are harmful, that somewhere we have heard that work never killed anybody, and we feel that education is desirable, so we regard the results with complacency. But if, when the rich man is taxed, he reduces his savings at a time when savings are needed, while the poor man spends his

increased income when more spending is undesirable, naturally we feel less pleased.

Speaking broadly, this is how the matter is settled in practice. Certain rules—such as the principle of maximum satisfaction—are referred to from time to time to justify government action along particular lines. But practical politicians and administrators always are watching the effects, and show willingness to revise laws and taxes if the effects appear undesirable.

Of course there is no universal agreement as to what is desirable. A Southern hill farmer may think that a still well-hidden on a mountainside is a very desirable possession and yet elsewhere a well-meaning American wants to tighten law enforcement forbidding such things. Hard work, along with a high income, may suit excellently a bustling citizen of Detroit although a Negro in Alabama prefers less work and more leisure. A Michigan manufacturer may be worried very little about the prospect of a national minimum wage of two dollars a day although the operator of a cotton gin in the South may view such a wage with consternation. Our system provides nothing better than the voting machine to settle such conflicts of opinion. In a large territory such as the United States, where people of many races and creeds live together, probably disagreements on matters of this kind can be expected to be more common, and perhaps more serious, than in countries with a more uniform population.

THE FINANCIAL ASPECT

In general terms we can divide government functions from the fiscal or financial aspect on the following lines.

- (1) Functions causing expenditure.
- (2) Functions involving both revenues and expenditure in considerable amounts.
- (3) Revenue functions.

It is the existence of the first class of functions, of course, which explains the necessity for the third.

Functions causing expenditure

Money is spent on a large scale for constructing things like roads, river and sea walls, and buildings to house government offices. It is spent also in paying officials in great numbers, on education, on defense and war, on police and law administration, as well as in paying subsidies and relief funds.

For a number of years there has been a marked tendency for government expenditure to increase, largely because of the expansion which has taken place in government activities. Education has been carried to more people and given for a longer period. More officials have been appointed to administer the increasing number of laws and regulations. Payments have been made on a large scale as subsidies to farmers, for relief of the poor, and for the construction of roads and buildings, with the dual purpose of raising the incomes of the poorer classes and priming the pump of business prosperity. Then the two world wars have led to enormous expenditures; between one-third and one-half of the national income was used for war purposes in the second war. In connection with both wars, America granted large loans to other countries, which have not yet been repaid, if indeed repayment was intended in some cases. Comparisons of money figures have to be interpreted with care, because of price changes, but it is enlightening to note that the ordinary expenditure of the federal government in 1940, the last prewar year, was about nine billion dollars, as compared with about three and a half billion in 1930 and only three-quarters of a billion in 1915, while the states spent on operation and interest nearly four billion in 1940, as against about a billion and a half in 1930 and less than half a billion in 1915.

Functions partially or wholly self-balancing

Certain enterprises conducted by the government fall into the self-balancing category. The post office is an example. Many American municipalities own public utilities and the federal government has developed certain utility projects. Abroad, government ownership is most important in the railroad and utility fields. Thus, in Canada the dominion government owns one of the two great railroads and several provinces own their telephone systems. Ontario has a publicly-owned electricity supply undertaking.

Sometimes enterprises are run by the government on the basis that they are expected to pay their own way, without any considerable profit or loss, the service they provide being furnished to the consumer at cost. But in other cases a profit is expected to be paid into the public treasury and sometimes this principle is carried so far that the enterprises are to be regarded as tax-gathering machines as well as organizations designed to provide goods to the public. The post office is an example. In Soviet Russia, considerable revenue has been raised from the profits of government-owned enterprises. Such profits evidently are to be regarded as sales taxes levied on the consumers of the goods concerned. Lastly, sometimes government enterprises are operated at a loss as a matter of policy because it is thought desirable to subsidize the enterprise concerned. Higher education and public concerts exemplify this.

Revenue-raising functions

Revenue is raised from various sources. Property owned by the government contributes something but the amount in America is relatively small. During wartime, equipment has been captured and property seized from enemy nationals but again the amount is not large and it has been swallowed

up in war expenditures. Subsidies from the federal government form a considerable part of the revenue of the local government bodies and, besides, they are an expense to the federal government itself. The same is true of the central and local governments of other countries.

Inflation. To some extent, governments have financed themselves by inflation. The issue of subsidiary money, coined at a profit, is an example of this in a mild degree, that of paper money one on a greater scale. Even convertible notes issued by the government generally are a source of revenue, because the gold reserves held against them usually are less than a hundred per cent. Inflation has proceeded very largely by the method of government borrowing from the banks, or by sale of securities to the banks, which comes to the same thing. Whether the government spends additional currency or newly created bank deposits, the effect is the same. The spending of money by the government raises prices. The government secures goods and fewer goods remain for the public.

Inflation by the method of bank loans means that, later, taxes will have to be higher to meet the interest payments, something which does not happen when inflation proceeds by the issue of currency. But there are prejudices against large issues of notes and the experience of the last war has shown that interest rates on loans need not be very high. In general, the main advantage of inflationary finance is that it can proceed smoothly and quickly and every major war has been accompanied by a greater or lesser degree of inflation.

When the extent of inflationary spending by the government is not very large, so that public confidence in the value of the money is preserved, individuals and corporations may allow a considerable part of the money they receive to remain idle in the form of bank deposits which are not circulating.

In this case, money that is in the hands of individuals does not compete intensively with government spending in the commodity markets, so the prices of commodities do not rise greatly and government spending of new money and newly created deposits is an effective means of finance. This is what happened in the Second World War in the United States. But once inflation has taken place to such an extent that public confidence is lost, competition to spend money raises prices very rapidly and serious trouble results. Germany in 1922-23 exemplifies this situation.

Borrowing. If currency and deposits which are in existence already are borrowed by the government, the effect is that purchasing power is transferred from the lenders to the government and, aside from a possible quickening of velocity, there is no inflation. When new deposits are created in connection with the loans, there is inflation, as has been pointed out. Borrowing has the merit that the individuals who transfer purchasing power to the government select themselves, as compared with taxation where the payer has no choice. However carefully a tax system is devised, it is not practicable to allow for the personal position of every individual, so that loans are advantageous on this account. Also borrowing usually can be arranged more quickly than taxes.

Sometimes it is said that loan finance leaves posterity to pay the bill. In the case of internal loans, that is, loans raised within the country itself, this is untrue. Posterity has to pay the interest and repay the principal, of course, but it pays those members of posterity who inherit the bonds or loan certificates. A loan is no burden on the group, therefore, unless it is owed to another group. Even in the case of loans raised abroad, there may be no burden on the group if the loans are used for productive purposes, such as for railroads or harbors.

Most wars have been financed to some extent by borrowing

and a large proportion of the public debts of central governments represent war expenditures. State and other local governments have borrowed extensively for public improvements, as did the federal government in the 1930's for various purposes connected with the recovery program.

Taxation. Taxes obtain revenue from the public by imposing a compulsory assessment, without any direct returns being made. Penalties imposed for lawbreaking also bring in revenue but are not regarded as taxes.

Frequently taxes are classified as *direct* and *indirect*, direct taxes being those whose burden is expected to fall on the person assessed and indirect taxes those whose burden is intended to be passed on to others. The income tax is generally regarded as a direct tax, while an import duty is one that is indirect. The distinction is not altogether clear in practice, however, because sometimes taxes which are regarded as direct may be passed to others and again taxes which are called indirect may fall on the person who pays them in the first instance. In recent years, there has been increased emphasis on direct taxes in this country as well as elsewhere.

THE PRINCIPLES OF TAXATION

Certain of the more important principles of taxation will be examined.

Incidence

The term incidence is used to denote where the burden falls. Thus, if the home consumer of an imported commodity has to pay a higher price because a tax has been levied at the port of entry, the incidence is said to be on him. If the foreign seller of the article has to accept a lower price, because of the tax, the incidence is on this seller. In many cases,

the burden or incidence is divided between two or more parties.

Under conditions of competition, incidence is unaffected by whether the buyer or the seller is taxed. This principle is illustrated by Figures 20 and 21.

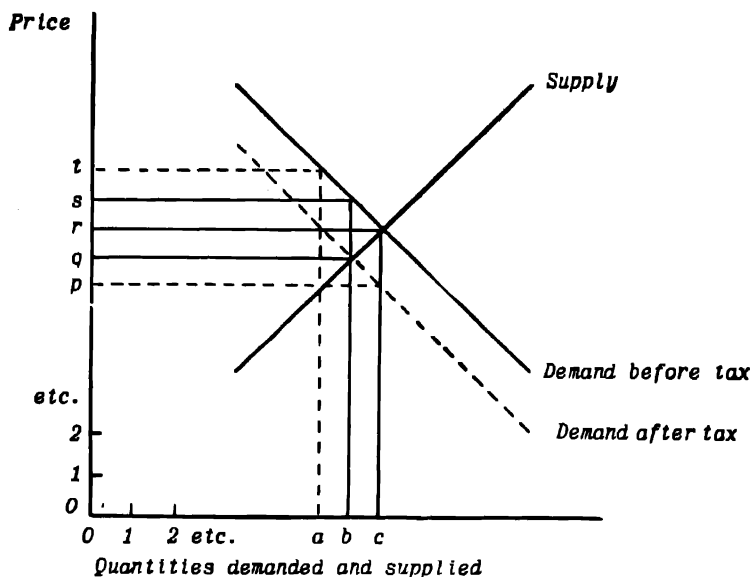


FIGURE 20. INCIDENCE OF TAX LEVIED ON BUYERS

In Figure 20, it is assumed that before the tax is levied the price of the taxed commodity was Or , a quantity of Oc being sold. A tax is levied on the buyers, equal to pr . We can suppose that Or is a dollar and pr is twenty cents. The commodity now costs the buyers pr (twenty cents) above the market price. Their demand at a price of Or , which costs them Ot (including tax) is Oa . For their demand to remain at Oc , the price will have to fall to Op , which means a cost to

the buyers (including tax) of Or . Evidently, the new price will be Oq , for this is where supply will equal demand under the new conditions. The quantity sold will be Ob . The buyer pays a total of Os , so that he bears rs of the tax. The seller receives Oq , which is less than he got before by qr , so that he loses qr because of the tax.

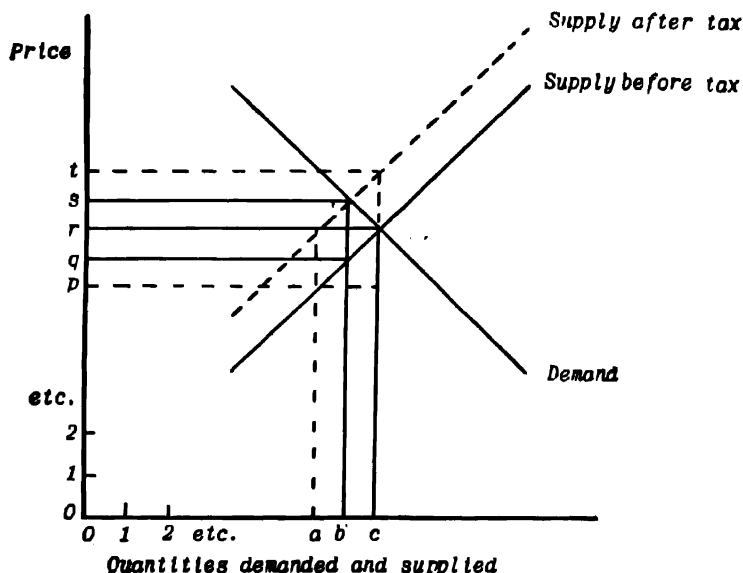


FIGURE 21. INCIDENCE OF TAX LEVIED ON SELLERS

In Figure 21, it is assumed that the tax is levied on the sellers. Before it is imposed, the price is Or as before, and the supply Ob . After the imposition of the tax, the net return to the seller from a price of Or is Oq , so that at this price he produces only Oa . It would require a price of Os , which gives the seller a net return of Or , to induce him to continue to supply Ob . The new price, at which supply and demand are equal after the tax is imposed, is Oq , which gives a net return

to the seller of Oq . Thus, whether the tax is levied on the buyer or seller, the same result is obtained. The net cost to the buyer is Os , the net return to the seller is Oq . The incidence on the buyer is rs , that on the seller is qr .

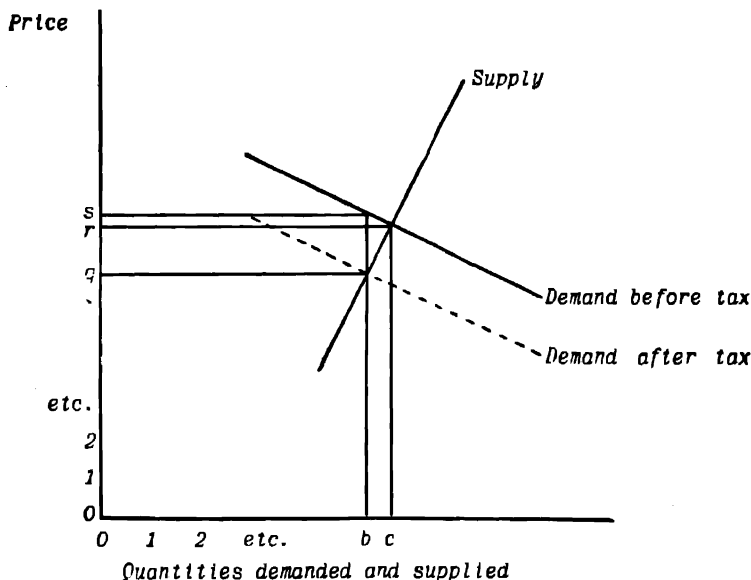


FIGURE 22. INCIDENCE WHERE DEMAND IS MORE ELASTIC THAN SUPPLY

In Figures 20 and 21, the incidence of the tax is shown as being divided equally between the buyers and the sellers. But this does not necessarily follow. Incidence depends on the relative elasticities of supply and demand. This may be demonstrated by comparing two cases, (1) where demand is more elastic than supply and (2) where the opposite situation applies. Figures 22 and 23 represent these two cases.

The figures are drawn on the basis that the tax is levied in each case on the buyers but, as we have seen, under competitive conditions this is immaterial. In Figure 22, where

the demand is more elastic than the supply, the incidence is largely on the *sellers*. The net amount they receive is Oq , which is less by qr than the price which they received before

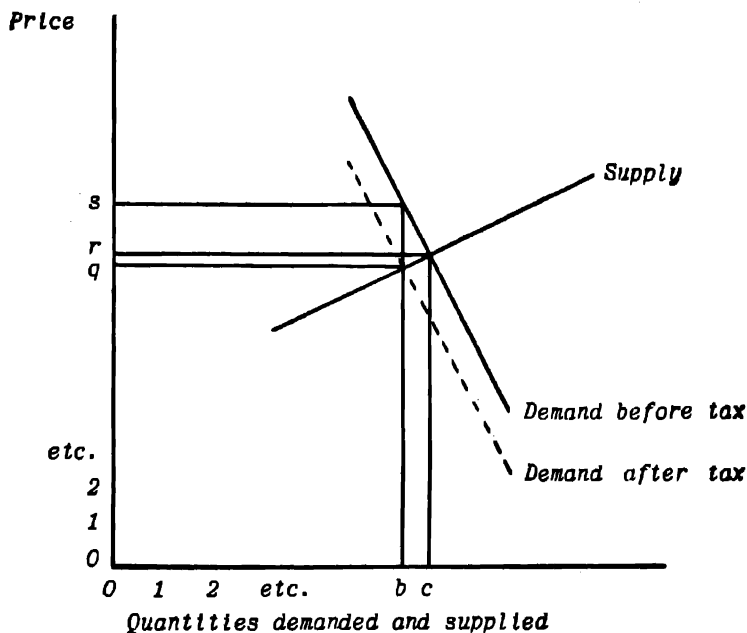


FIGURE 23. INCIDENCE WHERE DEMAND IS LESS ELASTIC THAN SUPPLY

the tax was imposed (Or). The incidence on the buyers is only rs , the small difference between the new price (Os) and the old one (Or). In Figure 23, with the demand less elastic than the supply, the incidence is largely on the *buyers*, because they pay rs more than the old price of Or . The sellers in this case bear only qr . We can draw the conclusion, therefore, that *the incidence is largely on the party whose position is the less elastic*. This accords with common sense. The party who is less able to make an adjustment is more

likely to suffer because of a tax. The extreme case of inelasticity, of course, is a situation in which there is no elasticity whatever. The owner of land is in this position with respect to a land tax. His buyers or customers have a certain amount of choice. They can build higher and so substitute capital for land. They can use more labor on the same area and thus substitute labor for land in the product.¹ The landowner is unable to withdraw his land, hence he pays all of the tax. The same is true of a lump sum tax on the profits of a monopolist. He is operating at his maximum profit position and this remains unchanged by the imposition of the tax. Therefore the entire incidence falls on him.

It must be remembered that frequently contracts enter into the matter. A price may be fixed by contract for a term of years or it may be subject to government regulation. In this case, a tax may have to remain for some time where it is levied in the first instance, so that here it becomes important where the tax is imposed, that is to say, whether it is laid on the buyer or the seller. Then a price may be difficult to alter except by relatively large adjustments. Thus a half-cent tax levied on a carton of cigarettes may increase the price by a cent. If a tax is levied on a bus company carrying passengers for a five-cent fare, the minimum increase in price which is practicable, one cent, represents twenty per cent of the price. In such situations, the consumer may not only bear the entire incidence of the tax but he may suffer a price rise as well. Or conversely the producer may be unable, or may consider it unwise, to increase the price, and consequently he bears all the incidence.

Apportionment of taxes

In discussion it is customary to relate taxes to the incomes of those who are taxed. Looked at in this way, a *proportional*

¹ See Chapter 12, page 156.

tax is one which takes an equal proportion of all incomes, large or small—that is, it increases in proportion to increases of income. A *progressive* tax takes a bigger proportion of the larger incomes; it increases with incomes more than proportionately. A *regressive* tax takes a smaller proportion of the larger incomes; it increases less in proportion to increases in income. An example of a progressive tax is the income tax, respecting which some information is given in Chapter 25. Most taxes on commodities are regressive, as are general sales taxes.

Certain principles have been developed in connection with the apportionment of taxes between different individuals.

The benefit principle. Sometimes it is said that a tax should be proportioned to the benefit it confers on the people who are taxed. Special assessments, levied on real-estate owners for such purposes as sewer connections, are justified on this ground. But there are two objections to the principle, as a general rule. First, most taxes are levied to meet the cost of government activity; the benefit is indirect and cannot be apportioned to particular individuals or classes. Second, it runs counter to other rules which commonly are regarded as more important, such as ability to pay.

Equality of sacrifice. Although this seems a logical principle and in general terms is widely favored, a detailed tax program based on such a rule cannot be developed because there is no satisfactory way of measuring sacrifice.

Minimum sacrifice. The utility analysis, carried to its logical conclusion in regard to consumption, supports taking all taxes from the richest people. It follows from the principle of diminishing utility that their dollars yield the least utility and therefore the least sacrifice is entailed if it is these dollars which are taken away in taxes. The objection to such a plan is that it would involve a hundred per cent taxation

on the highest incomes and therefore it would destroy the incentive of the taxed individuals to work and to save.

Ability to pay. This principle is widely accepted. Its name describes it fairly well. Ability nowadays commonly is measured by income, allowance being made for family circumstances. Remembering the effects of taxes on consumption and on incentive, we may consider that the ability to pay principle justifies progressive taxation. But it is an empirical standard and it is not always clearly defined. Perhaps the best way to look at it is to take both production and consumption into account and say that there is ability to pay a tax, if production and consumption are not unduly injured by its imposition. From this aspect, evidently the best taxes are those which do the smallest injury to production and consumption. One can even imagine a tax which benefits both production and consumption. If a tax on someone who is idle and dissipated causes him to work and to consume more sensibly, then there would be a double benefit from the imposition of the tax.

Non-fiscal objectives in taxation

Taxes are used widely to attain other objectives than raising revenue. Thus, import duties are levied to encourage home manufactures. In some countries, excise taxes on liquor have an admitted object of reducing its consumption. In the last few years, considerable attention has been given to the possibility of using fiscal policy to control the business cycle and ensure full employment. Sales taxes might be an appropriate means of controlling a boom but from this viewpoint probably they are harmful during a depression. Perhaps the main difficulty here is that, with political and administrative organizations as they exist in this country, it is not very practicable to make frequent and rapid changes in tax schedules.

THE PROBLEM OF THE PUBLIC DEBT

The American public debt stands at unprecedented levels. The First World War left a large debt behind it. Then came the heavy borrowing undertaken to finance recovery measures in the 1930's. Finally, astronomical sums were borrowed during the Second World War. Alarm is expressed from time to time at the size of the debt. What are we to think of the situation?

First, it should be repeated that an internal debt (that is, a debt held by residents of the political area concerned) is not in itself burdensome on the people as a whole, although the taxes which are levied to meet it may be imposed in such a manner as to injure the economy, as they do when they are so high as to reduce enterprise and cut down new investment. The American public debt is held internally. It involves high taxation to meet the interest payments. But there is no reason to fear that this taxation in itself will reduce the national income, because when the interest is paid to the bondholders it adds as much to the national income as the taxes take away, aside from the relatively small sum required to administer the taxes and interest payments.

Realizing these things, some people go on to advocate that the government should continue to finance itself by borrowing. If it does so, we can expect certain results to follow. First, if reasonably full employment can be attained by inflationary borrowing, no doubt with some issuance of paper money, there will be a bigger national income out of which to meet all the costs of government, including interest on the debt. Probably such a process would be accompanied by a rising price level, because it appears unlikely that anything like full employment can be secured without causing considerable shortages in some markets. Higher prices would reduce the burden of the debt, while full employment would

increase the power of the public to sustain taxation. But if the government does not switch over to taxation as a means of raising revenue as full employment is reached and instead it continues its inflationary borrowing, then either the inflationary effect of the borrowing must be cancelled by a slowing down of the velocity of money in the hands of the public (by the public's leaving its money unspent, as happened to some extent during the Second World War) or there will be a serious inflation of prices. Since it is difficult to believe that velocity will slow down indefinitely, that is, that the public will be content to leave unspent an unlimited sum of money, there is little doubt that the continuance of such a program is likely to lead to a serious price inflation.

SUMMARY

The principle of maximum satisfaction is favored widely as a guide to government action but it suffers from the objection that satisfaction cannot be measured in a manner adequate for such a purpose. More empirical methods must be employed in practice.

From the financial side, government functions may be classified according to whether they involve mainly expenditure, mainly revenue, or are in a considerable measure self-balancing. Revenue is raised by various means, of which the principal are inflation, borrowing and taxation. The principles of taxation are discussed, including incidence and the rules governing the apportionment of taxes. Non-fiscal objectives are significant.

The problem of a large public debt is examined.

EXERCISE

Ask at your local income-tax office for a copy of the sheet which gives the percentage income taxes at various income levels. Examine it.

PROBLEMS

1. A European city some time ago issued paper money to pay for the construction of a market building. Who bore the burden of constructing the market?
2. If posterity does not "pay the bill" in the case of a war bond, who bears the burden?
3. What do you consider would be a good way for the government to raise funds in a time of prosperity? In a time of depression?

NOTE REGARDING FIGS. 20-23 (INCIDENCE OF TAXES)

These figures show (in dotted lines) new demand and supply curves after the imposition of a tax. This does not mean that demand has changed in the sense in which changes in demand were discussed on pages 65-69 of this book, that is, that the consumers' reactions to particular prices have altered, nor that producers have changed the amounts of goods which they are willing to put on the market at stated prices. Instead, what happens is that, after the imposition of a tax, it becomes necessary to distinguish between *market prices* and what may be called *net prices*. Market prices are the prices at which goods are bought and sold, net prices represent the total cost of the goods to buyers (including any tax levied on the buyers because they purchase the goods) and the net return to sellers (after deducting any tax they have to pay because they sell the goods). Market and net prices coincide if there is no tax on the commodity, but not if there is a tax. The consumers' and producers' responses to net prices are unaffected by the imposition of a tax, but not their response to market prices.

CHAPTER 25

THE NATIONAL INCOME

It is possible now to survey the economy and, in general terms, to answer the question of what individuals get out of it. As Adam Smith said, "Consumption is the sole end and purpose of all production."¹ We have learned something of the nature of both consumption and production. We have seen how the revenue derived from the sale of the produce is divided among the owners of the factors which have contributed to the production process. We have examined also the manner in which changes in the general level of prices affect the position of the various groups. Finally, we have studied what the government does in a supplementary way; levying taxes on the one hand and giving out benefits on the other. Thus we have reached a position where we can survey the whole from the standpoint of those whom it is supposed to benefit.

THE POSITION OF AMERICANS AS COMPARED WITH FOREIGN PEOPLE

Americans frequently are told that their standard of living is the highest in the world; that they are better off than any other people so far as economic goods are concerned. Such figures as were available on the subject substantiated this during the 1920's. Certain other countries were not far behind, however, notably Canada, Australia and New Zealand; and a more recent estimate has placed New Zealand ahead of the United States.

However, comparisons of money incomes, even when

¹ *Wealth of Nations*.

adjusted to allow for price differences, are limited in their usefulness because there is a great variation in what is consumed in different places. Advantages to which some Europeans attach very great value, such as art treasures and historic shrines, cannot be had in Australia, for instance, or in many parts of the United States. This explains why some Australians and Americans visit Europe. On the other hand, Australia, all the year around, and the United States, during the summer months, offer possibilities of open-air life which are not available to the ordinary people of northern Europe. We have no satisfactory criterion with which to measure the living standards of different countries. We may ask, for instance, how much it will cost someone living in Brisbane, Australia, to live like the Londoner, but if we do we must recognize the fact that the Australian must travel to Europe to see works of art comparable to those enjoyed in London by the Londoner, while the Londoner must go to the French Riviera from time to time, to avail himself of sea bathing such as the Australian has at home. No one can say whether an art gallery is better for mankind than a bathing beach. Notwithstanding the development of certain elaborate statistical techniques, there is no measuring rod which is satisfactory for this purpose.

Nevertheless it can be stated that both published figures and the observations of travelers show that the average American has more economic goods than most other people and very considerably more than many. Countries such as England and Belgium are well behind the United States, with India and China far in the rear. However, incomes in these other countries are unequally distributed among the various individuals. Some are rich, even by American standards, while others are exceedingly poor, and this has been the case for centuries.

THE POSITION OF ONE AMERICAN AS COMPARED WITH ANOTHER

The expendable money income of the individual may be calculated by deducting taxes from the income derived from the sale of factors of production and adding gifts and cash subsidies received from the government. The real income is what this money will buy, together with goods supplied by the government free of charge.

Both these formulae require qualification to the extent that certain contributions may be virtually compulsory. Thus, if a worker feels that unless he subscribes to a plant charity he will lose his job, the money he pays in this manner must be regarded as a tax. Similarly, if he feels that he must buy war bonds he must sacrifice the consumption of so much income, although he expects to be able to consume it later when the bonds are repaid.

The National Resources Committee in 1938 published some interesting figures on the distribution of incomes in this country in 1935-36, a fairly prosperous year. In that year, the figures indicate, there were just under forty million *consumer units*, nearly thirty million being families and about ten million, single individuals. The average family income was \$1,622, which equalled \$411 per person in the families; the average income of the single individual units was \$1,151. The range or spread of incomes for the entire group is shown in Tables 24 and 25.

Table 24 shows that in the year 1935-36 the one-tenth of the income which went to the richest group was received by only one-half per cent of the consumer units and consisted of incomes of \$14,600 and over. At the lower end of the scale, one-tenth of the income was divided over as many as 32.3 per cent of the units, all receiving less than \$760. According to Table 25, the richest one-tenth of the people received as

TABLE 24. DISTRIBUTION OF INCOMES BY SIZE, 1

Proportions of total income	Percentage of total number of consumer units receiving this income	Range of incomes received by consumer units in this group \$
Top one-tenth	0.5	14,600 and over
Second highest one-tenth	1.9	4,900-14,600
Third " "	4.1	3,100- 4,900
Fourth " "	5.7	2,375- 3,100
Fifth " "	7.1	1,950- 2,375
Sixth " "	8.7	1,610- 1,950
Seventh " "	10.1	1,320- 1,610
Eighth " "	13.0	1,040- 1,320
Ninth " "	16.6	760- 1,040
Bottom one-tenth	32.3	Under 760

TABLE 25. DISTRIBUTION OF INCOMES BY SIZE, 2

Proportions of total numbers	Percentage of total income received by consumer units in this group	Range of incomes received by consumer units in this group \$
Top one-tenth	36.2	2,600 and over
Second highest one-tenth	14.5	1,925- 2,600
Third " "	11.5	1,540- 1,925
Fourth " "	9.3	1,275- 1,540
Fifth " "	7.5	1,070- 1,275
Sixth " "	6.6	880- 1,070
Seventh " "	5.5	720- 880
Eighth " "	4.3	545- 720
Ninth " "	2.9	340- 545
Bottom one-tenth	1.7	Under 340

much as 36.2 per cent of the total income, or \$2,600 and over for each unit. The poorest one-tenth received only 1.7 per cent of the national income, with less than \$340 each. This general situation characterizes all countries for which such data are available. Everywhere a relatively small proportion of the people receive high incomes, while the great mass are comparatively poor.

It may be of interest to examine the distribution of incomes between the various occupational classes. Table 26 gives the average incomes of families in the various classes who received no government relief.

TABLE 26. DISTRIBUTION OF INCOMES BY OCCUPATIONAL CLASS

The groups	Average income in the group \$	Percentage of families in the group
All families	1,781	100.0
Wage-earning	1,289	37.9
Farming	1,259	24.8
Clerical	1,901	14.5
Business—salaried	4,212	4.5
independent	2,547	9.5
Professional—salaried	3,087	4.0
independent	6,734	1.4
Other	1,696	3.4

THE DIVISION OF INCOME AMONG THE FACTORS OF PRODUCTION

It may be worth while also to examine the manner in which the national income is divided among the owners of the various factors of production. Table 27 includes figures published in respect to the year 1945.

TABLE 27. DISTRIBUTION OF INCOMES BY FACTORS OF PRODUCTION

Income	Billion dollars	Percentage
Total national income	161.0 ²	100.0
Paid to employees—salaries and wages	111.4	
supplements	3.1	
	114.5	71.1
Net income of proprietors, agricultural	12.5	
non-agricultural	<u>13.1</u>	
	25.6	15.9
Interest and rent	11.8	7.3
Net corporate profits—distributed as		
dividends	4.5	
retained	4.5	
	9.0	5.6

In relating the data given in the table to what has been said in this book on the subject of factor-distribution, it should be borne in mind that the profits figures in the table refer to profits in the regular sense, not in the economist's sense, and therefore include elements of wages, interest and rent.

In the years immediately before the war, the money value of the national income was rather less than half this amount. Wages and salaries accounted for a somewhat smaller proportion (about sixty-seven per cent) and interest and rent, a larger percentage (approximately eleven per cent). The fall in the proportionate share of interest and rent is attributable to the rise in prices which took place during the war and bears out what was said in Chapter 20 concerning the effects of changes in the general price level. Within the wages and salaries group, there were undoubtedly many salaried persons whose money incomes did not rise sufficiently to

² The items in this table add to 160.9 billions and 99.9 per cent. Rounding-off explains the discrepancies.

counterbalance the increased cost of living of the wartime years, so that their real incomes declined. On the other hand, numerous industrial wage-earners gained in real incomes because their money incomes increased more than did the cost of living.

THE DIVISION OF FACTOR INCOMES AMONG INDIVIDUALS

Most of the income received by the low-income group is in the form of wages. Business or proprietors' income makes up a sizable proportion, however, because of the inclusion of farmers and other small-scale enterprisers. Even the relatively poor receive some interest from war bonds and savings deposits. Rents and dividends enter largely into the income of the rich, although there is a substantial ingredient of what economists call wages in the higher incomes, in the form of executive and other salaries.

Duplications prevent any accurate determination of the number of individuals who own property in the form of real estate, savings or other bank deposits, and corporation stocks. The American Telegraph and Telephone Company had 668,000 stockholders at the end of 1944, of whom nearly one-third held no more than five shares and almost one-tenth were employees of the company. Five shares of this company's stock at the time were worth about eight hundred dollars. Nationally known smaller corporations, such as Swift & Company (meat packers) and the Borden Company (dealers in milk and dairy produce) listed 60,000 and 49,000 stockholders respectively. To obtain information regarding the type of investors who were purchasing its shares, the Borden Company issued a questionnaire to these individuals. Of five hundred persons who replied, twenty-six per cent reported that they relied entirely on dividends for a livelihood but on the other hand twenty-nine per cent replied that they depended on them very little. Forty-four per cent bought

less than twenty-five shares which, in the market, were then worth about a thousand dollars. Such other information as is available supports this. Evidently there is considerable ownership of corporation stock by small investors in this country and yet, in American as well as in other countries, it is even more true of capital than of income that a comparatively small proportion of the population possesses most of it and the remainder relatively little.

SAVINGS

A final comment is in place on the subject of how people use their incomes. If we take 1940 as the last year before the Second World War, the flow of goods to consumers represented 68.8 billion dollars. Non-war capital goods equalled 16.7 billions but more than half of this amount was required for replacement, so that the net addition to capital goods was 9.3 billions. After the first year of war, the production of capital goods for peacetime purposes was reduced. From the middle of 1942 it stood at a negative amount because replacements were no longer sufficient to offset wear and tear. In 1943 it is estimated that the net diminution of non-war capital goods was 6.5 billions. Aside from war construction, far from saving anything, America was using up the savings of past years in the latter part of the war.

Individual savings were extremely high during this period, representing nearly a quarter of the national income. These savings, however, were used largely to purchase war bonds,^a not to finance the construction of peacetime capital goods. Americans were saving individually but running into debt as a group during the war years.

To avoid the distorting effect of wartime changes, we will return to the year 1935-36 for information on the manner

^a Either directly, or indirectly, through bank deposits which were invested in war bonds.

in which saving is distributed among the various income groups. The report on consumer expenditures issued by the National Resources Committee in 1939, covering the year 1935-36, indicated that families in the lower income groups spent more than they received in incomes. The poorest group, with incomes below \$500 in that year, spent on an average \$162 in excess of their incomes. Not until the \$1,250-\$1,500 class was reached, was expenditure covered by income, about one per cent of the income being saved in this group. Above this, the percentage saved increased steadily until the highest group, those with \$20,000 a year or more, saved slightly over one-half of their incomes. This phenomenon again is a general one, found in most countries for which figures are available. One notable observer commented some years ago that probably here was one of the reasons why society tolerates such a wide disparity in incomes. If the rich were to consume all they received, he said, society might decide to dispense with them. But if they devote a large proportion of their incomes to saving and thus provide society with the capital goods which it must obtain under any system, to this extent riches as a social phenomenon become more tolerable.

TAXATION AND SUBSIDIES

Taxation and the distribution of wealth

With taxation as it has been in recent years, the income figures which were given in Tables 24 and 25 do not mean a great deal because taxes have to be deducted which affect them very materially.

It is not possible to determine the effect of taxation on the incomes of the different classes with any great accuracy. The federal government raises a certain amount of revenue from indirect taxes, such as those on tobacco, whose effect on the

different income groups cannot be traced. Considerable sums are raised for local purposes by taxes on gasoline and on real estate, as well as by general sales taxes. It is impossible to say how much of these each group bears. In general it can be assumed that such taxes are regressive, taking a bigger proportion of income from the poor than from the rich, but the regressive nature of these taxes appears to be much more than offset by the highly progressive income tax.

Even before the Second World War, the income tax was strongly progressive and fell heavily on the higher incomes. At the time America entered this war, a single man was allowed an income of \$750 a year free of income tax, a married man \$1,500, with \$400 additional for each child. Above this exemption, the first \$2,000 of income was taxed at six per cent and the tax rate rose gradually. At \$20,000 to \$22,000 above the exempted amount, the rate was forty-one per cent. Between \$200,000 and \$250,000 it was sixty-seven per cent, and above \$5,000,000 the limit of seventy-seven per cent was reached. By 1944, when the peak of wartime taxation was reached, the exempted minimum had been changed somewhat and the rate of progression increased. The first \$2,000 above the exemption was taxed at twenty per cent and the rate increased by steps. Between \$20,000 and \$22,000 it was fifty-six per cent, and a maximum rate of ninety-one per cent was attained with incomes of above \$200,000. Further, another tax took an additional three per cent.

Subsidies and goods supplied free of charge

It is even more difficult to assess the value of government assistance to the various classes than it is to ascertain the weight of taxation. Education is provided free of charge on an elementary level and is available at subsidized rates in higher grades. But it cannot be apportioned between the various income groups without making assumptions regard-

ing numerous factors. Who benefits, the parent or the child? Must someone who does not want education be considered to be benefited because he is compelled to acquire a certain amount? However, all in all, it seems clear that money spent in this way helps to equalize the distribution of wealth, just as does money devoted to the provision without charge to the consumer of any good which is in general use. Then there are benefit payments, which were very large in agriculture in the 1930's and seem likely to be continued in some form for a further period. A corn-belt farmer who received a government check for four hundred dollars to add to net income of about fifteen hundred dollars from other sources had reason to consider this an important element of distribution so far as he was concerned. Poor relief must be considered also.

Taking taxes and subsidies together, probably the effect is to reduce considerably the inequality which exists in incomes before these factors are taken into account. Since most published figures on the subject of incomes ignore the effects of taxation and subsidies, as representations of the distribution of disposable incomes they appear misleading.

SUMMARY

Figures show that the American people are better off in economic goods than are those in most foreign countries, although accurate comparisons are impossible. Notwithstanding this, most American families receive low incomes.

In recent years, wages and salaries have accounted for about seventy per cent of the total national income. In peacetime, savings come principally from the higher income groups. Taxation and subsidies appear to reduce inequality considerably.

EXERCISES

1. Plot a graph, showing the distribution of income in the United States, employing the data given in Table 25.

2. Refer to the income tax sheet which you were asked to obtain in connection with the exercise given you at the end of Chapter 24. Draw a graph indicating (a) the income groups and (b) the percentage of tax in each group.

PROBLEM

The figures show that the lower income groups spend more than they receive in income. Where do you think that the difference comes from?

NOTE ON DISTRIBUTION OF INCOMES IN 1945

Since the foregoing chapter was written, the Board of Governors of the Federal Reserve System has published the results of a survey, incorporating figures on income distribution in 1945. The 1945 data are summarized below.

Range of incomes received by consumer units in group	Percentage of consumer units receiving this income
\$	
0-999	20.1
1,000-1,999	27.0
2,000-2,999	22.4
3,000-3,999	15.3
4,000-4,999	6.8
5,000-7,499	4.8
7,500 and over	2.6
Not ascertained	1.0

Table 25 shows that, in 1935-1936, twenty per cent (the bottom two tenths) of the consumer units had less than \$545 and thirty per cent (the top three tenths) received above \$1,540. In 1945, 20.1 per cent had less than \$1,000 and 29.5 per cent ($2.6 + 4.8 + 6.8 + 15.3$) received more than \$2,999. What has been said in the chapter, to the effect that most people receive relatively low incomes, was still true in 1945, because at the price level prevailing in 1945 \$2,999 cannot be regarded as a high income and yet about seventy per cent of the consumer units received no more than this amount.

CHAPTER 26

SOME CONTEMPORARY PROBLEMS

The arrangement of this book has made it possible to discuss many economic problems of current interest in the various sections. Thus, the problems presented by price control are dealt with appropriately in connection with the theory of that subject, that of unemployment has received some attention in the discussion of wages and business fluctuations, and some of the effects of immigration were considered in the section on wages. All that is attempted here, therefore, is to raise certain questions of a fairly general nature to see how what has been learned from the book can help to answer them.

THE RELATION OF GOVERNMENT TO BUSINESS

The proper sphere of government is an ever-present problem in a mixed economy. There is no unanimity of opinion on the subject in America at the present time. Every shade of thought is represented, from the socialists, at one extreme, who advocate government ownership of the more important productive enterprises, to the self-reliant businessmen who insist that all they want is to be left alone. Some advocate specific programs of government intervention, such as socialized medicine, the dissolution of monopolistic manufacturing corporations and the rigid control of public utilities, increased control of the labor unions, extension of social insurance, or guaranteed prices for farm products.

Some disputants base their policies on a firmly-held general principle, as is the case with those who are so convinced of the benefits of socialism that they support every scheme which seems to represent a move in that direction. There are others

who approach the problem from the standpoint of self-interest and bring pressure to bear for the purpose of enacting laws which they think will be to their advantage.

Arguments on this subject are at least as much political as economic. Frequently they are based on the concept of maximum satisfaction and follow the line that government action will increase or decrease either the product or the cost of furnishing it.¹ They require to be examined with great care. For instance, often it is said that the government can operate a particular industry more cheaply than can private enterprise because the government can borrow its capital at a lower interest rate. The relative cheapness of government borrowing is more apparent than real. The government guarantees the investor against loss and if the enterprise for which the capital is raised proves a failure, the government must meet the interest payments and principal repayments out of general taxation. At times such guarantees have proved very costly. There seems no evidence that the government can borrow more cheaply than private enterprise can if this aspect is taken into account.

Then people speak of government planning as though it necessarily would be based on wisdom superior to that commanded by private enterprisers. Again there is a lack of evidence that government planning in general is less likely to prove mistaken than is the case with private planning.

On the other hand, advocates of private enterprise assert that government management destroys initiative and takes away the incentive to strive. The truth is that every large enterprise has to face the problem of preserving incentive and some of the measures available to private enterprise are open also to the government. Perhaps the most alarming aspect of the labor side of government business in this country is the tendency of politicians to regard positions in gov-

¹ This concept was discussed in Chapter 24.

ernment employment as the legitimate reward for political services of various kinds.

So far there has been little support for outright government operation of industry in America. Intervention has taken the form of regulation of private enterprisers. Various facets of this development have been examined in the preceding chapters and it is unnecessary to add here anything which is more than general in nature. Possibly the most outstanding change in public opinion on this subject which has been seen in the United States in recent years has been the growing acceptance given to the plan of maintaining full employment by means of monetary and fiscal policy. This has shown itself in many ways. For instance, during the depression of the early 1930's, government assistance to farmers was supported on the ground that it would increase general purchasing power and thereby help to promote recovery. More recently leaders of the labor unions have argued that wage increases are justified because they increase spending and therefore help in the maintenance of general prosperity. There is a certain truth in the argument, given the proper conditions. Increased spending in a depression is a desirable thing, although whether the farmers, industrial workers or some other group (such as the unemployed) furnish the best medium has to be considered. But at a time of full employment increased spending is harmful because it can cause only inflation. Here again we see the necessity of studying the matter in a scientific manner before delivering a judgment.

THE FAMILY INCOME

Another problem which has aroused great interest in some foreign countries in recent years and is equally important in the United States, if somewhat neglected here, is that presented by the family income.

In the discussion of differences between men's and women's

wages brief mention was made of the difficulty caused by the disproportion between income and family obligations in a society in which income is determined by the selling prices of the factors of production and ordinarily has no regard for family circumstances. Many families are reared in poverty because of this condition, with resulting discomfort, malnutrition and sometimes lasting injury to physical and mental development.

Since competitive business cannot pay higher wages to those who are married and have children to maintain than it does to single persons, other means of dealing with the situation must be found. Tax differentials have been developed in America and these are of some benefit. When income tax rates were at their highest in 1944, a married man with two children and an income from wages of fifty dollars a week had \$2.50 in tax deducted from his weekly wage, while a single man's deduction at the same wage level was \$8.20. Thus in effect the government contributed \$5.70 weekly toward the cost of maintaining the family of the married worker but obviously this did not represent a very large proportion of the costs incurred.

Then considerable education is furnished by the government free of charge, and in some instances meals are provided free or sold at low rates to school children. Free advice is given on health and hygiene and in some localities hospital and similar services are subsidized from taxes.

In certain countries abroad what are called *family allowances* have been instituted. These are of two kinds. In one type employers pay a portion of the wage into a central pool or fund from which allowances are paid to wives and children. The wage itself takes no account of family obligations and what happens is that everyone gets the same wage but married persons receive an additional allowance from the pool. Schemes of this kind have been popular in France

and other European countries. The second type depends on the payment of allowances for wives and children by the government, the money being raised through taxation. Canada recently has instituted such a plan.

Some of the discussion of such arrangements has centered on their effect on the birth rate. In France family allowances have been favored by some because it was hoped that they would increase the birth rate, which was felt to be too low, especially considering the danger of war with Germany and the need for soldiers. In Canada, on the other hand, a possible stimulus to births was regarded by some critics as an objection and it was met in part by setting a limit on the number of children for whom allowances would be paid. There is no evidence that the French allowances had any effect on the birth rate. Certainly the birth rate did not rise, although there is no means of knowing what it would have been if the allowances had not been instituted. In Germany after 1933 there was a pronounced rise in the birth rate and this was attributed by some observers to the energetic measures taken by the Nazis to encourage births. But even this is not conclusive because the Nazi measures coincided with a world-wide economic recovery in which Germany participated. Economic recovery, that is, a return to prosperity after a depression, usually is accompanied by an increase in the marriage and birth rates.

SOCIAL SECURITY

Much interest has been aroused lately in the problem of social security. Between a secure income and an individual who is willing to work for an income there are a number of pitfalls. He may become sick. An accident at work or elsewhere may destroy his working capacity, temporarily or permanently. He may become unemployed. And if he escapes

all these dangers, a time comes when he is too old to work in his ordinary employment.

Very few workers in the past have provided voluntarily for these contingencies by means of insurance. Consequently insurance has been made compulsory in some countries, including the United States, and old age benefits have been furnished by insurance or paid free of charge out of taxation. Insurance premiums are collected from both employers and employees and in some instances they are supplemented by government grants.

At times there is discussion as to whether it is right or fair that the employers should be required to pay part of these insurance premiums. In view of what was said in Chapter 24 concerning the incidence of taxes, it will be appreciated that in the long run this point is not so important as it appears at first sight. A premium is like a tax and under conditions of competition it will be divided in the same proportions between employers and employees, no matter how it is levied in the first instance. Often there is little opportunity for competitive adjustment in the short run and then it becomes more important on whom it is levied. Yet even here it represents only another counter in the wage bargain and without analyzing each situation in detail it is impossible to ascertain who bears the burden.

The principle of diminishing utility would justify levying premiums and paying benefits sufficient to stabilize the incomes of the individuals concerned, allowing for costs incurred in connection with the employment on the one hand and those entailed by sickness on the other. The worker thus would be as well off when idle as when working. But probably this would lead to malingering on a large scale. Many people would sham sickness and remain unemployed through their own fault. Partly for this reason, social insurance benefits are low.

Experience has shown, however, that even relatively large discrepancies between the insurance benefit and the normal wage are insufficient to exclude malingering and so a certain amount of policing has to be undertaken. Medical reports are required in the case of continued sickness, and sometimes unemployment insurance schemes are operated in conjunction with government employment bureaus or job-finding services. Not all malingering is avoided, despite these arrangements. Because of the low benefits, the insurance schemes operate rather to prevent privation than to assure the worker of a reasonable living standard.

In the broader sense of ensuring satisfactory standards of life for all, social insurance has to cope with the problem of incentive. The question has been argued for a long time. Can income be distributed on the basis of human needs without destroying the incentive to effort to such an extent that there is substantially less income to distribute? Some writers who have accepted the diminishing utility principle and drawn from it the conclusion that equality of incomes would maximize satisfaction have ended by rejecting equality because of what they feared would be its effect on incentive and therefore on the volume of production from which incomes are drawn. Perhaps only experience can give a reliable answer to the question. But psychologists recognize other human motives and, in view of what has been learned in recent years regarding the power of education and propaganda over men's minds, we cannot exclude the possibility that a society may be developed in which there is less need than at present to rely upon self-interest as an incentive to production.

POPULATION

Economic study of population has turned largely on the proportion between people and resources. The early writers

had in mind the principle of diminishing returns and believed that a growth in population would be accompanied by lower real incomes. But writers were not wanting who pointed out that certain advantages attended population growth, such as the opportunities afforded for specialized production by a larger market. Hence the concept of an optimum population was put forward, the notion that under any particular conditions there was an optimum or best population. This was understood to mean a point of maximum real income per capita, or else of maximum satisfaction, disregarding the possible satisfaction accruing to the unborn. In the chapter dealing with wages, it was mentioned that in some instances labor groups have opposed immigration on the ground that it would lower the wages of the workers already in the country, while employers sometimes have advocated it with this in mind. In some cases, statesmen in young countries have supported immigration for a different reason. They have seen that a larger market would make possible the institution of economies in production which would more than compensate the tendency toward diminishing returns.

If we are to judge by the prevalence of voluntary restriction of family size in this country and the reasons commonly advanced for it, we may conclude that most Americans believe that real incomes per capita can be raised by reducing the number of people. A leading American writer on population expressed the view, not long ago, that the optimum population of the United States when he wrote was about a hundred millions, suggesting that there are too many people in this country for wealth per head to be at its maximum. Having regard to the increased birth rate of the last few years and the somewhat alarming forecasts which have been made lately concerning the exhaustion of such resources as oil and high-grade iron ore, as well as soil de-

terioration, this appears disturbing. However, the birth rate was falling for many years before the Second World War. Relatively high birth rates have been associated always with periods of unusual business prosperity, such as has been experienced in recent years. Various wartime factors have operated to increase the birth rate. It is too soon to say that the recent increase in the number of births is more than a temporary phenomenon. No one can say what science has in store respecting the utilization of resources. Hence, opinions on the subject cannot be more than speculative.

In any event, economic considerations are not the only ones receiving attention in population discussion. Often economic arguments are overruled because of political factors. When Germany instituted measures to stimulate birth after the accession to power of the National Socialists in 1933, it was not maximum wealth per capita but a plentiful supply of recruits for industry and especially for the army that was the influential factor.

Attention has been called in late years to the fact that the practice of limiting family size has been most prevalent among the middle and upper classes, so that the larger proportion of births are among the poorer groups. Since in a competitive society people frequently are poor because they are inefficient, this aspect has caused considerable concern. It raises the question of whether it is not those who are least fit who are largely reproducing the race. However, it has to be recognized that inefficiency is only one of the causes of poverty and perhaps not the most significant. Moreover, in a society in which inherited wealth is important, inefficiency is not confined to the poor. The entire question is a sociological as well as an economic problem and it cannot be dealt with exhaustively here.

ECONOMIC PROGRESS

The nature of economic progress

Economic progress takes two forms. More goods may be obtained and existing goods may be secured more easily, that is, with smaller expenditure of labor and other resources.

To many persons this seems an unduly materialistic view and sometimes it is criticized on this ground. But the criticism is unjustified. Economists define goods to include anything which satisfies men's wants, so that goods include Shakespearean plays as well as automobiles. With the possible exception of disgruntled schoolboys who are compelled to study Shakespeare when they would prefer to be outdoors playing football, no one is likely to question that the world would have benefited if Shakespeare had been a more efficient worker. He then could have produced more plays, containing delights which have remained untold, in addition to those we have now.

Aside from the problem of having more things, reduction of expenditure in producing them is very desirable. If less of the world's stock of natural resources is used up in producing one good, there is so much more left with which to manufacture others. If less is used now, more remains for the future. If less time is consumed in making commodities, more time is available in which to enjoy their consumption. We can read more books and read them more often, we can visit new places in our automobiles and call on our friends more frequently, and we have more time to devote to tennis and music.

It frequently happens that society is presented with a choice between the two objectives. Every labor-saving invention offers mankind the alternative of having more goods to consume or more time in which to enjoy the existing goods.

In a broad sense this is the problem which America faces when it chooses between a forty-eight hour week and a working week of forty hours, for example. The farmer, who is not subject to such legal restrictions, settles the matter for himself when he decides whether or not to put in a few extra hours plowing at night or on Sunday. The New Yorker may put the balance in one place and the Mexican may prefer it in another. But economists only consider what is involved in such judgments—they do not make them, at least not on a national scale.

Many persons compare the material culture of the present with what they understand of the past. They notice that there have come down to us beautiful churches and temples, wonderful pieces of art and literature. They feel that the modern world is not contributing its share to this fund of beauty. They indeed go further and say that it is destroying much more than it contributes. But it must be remembered that many of the beautiful things which we have inherited from the past were produced mainly for the benefit of a leisured few by workers who themselves had little opportunity to enjoy the beauties which their labor had created. The people of long ago were for the most part undersized and short-lived. They did not get as much satisfaction out of their lives as might have been the case. It seems possible that America has developed a civilization which is more material than that of Europe of the past partly because centuries of immigration have brought to American shores those Europeans who were willing to cast aside their old values in favor of economic advancement. But there have been other major motives than the economic one behind the flow of immigrants across the Atlantic and such reasoning cannot be carried very far. If we feel that civilization is too material and insufficiently aesthetic, then all that we need do is to

persuade people to want the material less and the aesthetic more.

The possibilities of progress

The mass of Americans are by no means rich. The figures which were quoted in Chapter 25, referring to 1935-1936, showed that this was the case at that time. The national income in 1945, as expressed in money, was over twice as great as in 1935-1936, but prices in 1945 were considerably higher than in 1935-1936, and a large proportion of the income in 1945 was devoted to war purposes. Probably, therefore, the difference in real income was not very great. Even though business conditions in 1935-1936 were very much better than they had been in the depression proper earlier in that decade, there still remained considerable unemployment. This was true of the world as a whole at that period, although in terms of business cycle nomenclature 1935-1936 was at the end of a recovery period, if not in the prosperity or boom phase itself which preceded the recession or slump of 1937-1938.

The tremendous output of American industry during the Second World War showed how much could be produced under conditions of full employment. Since those who believe that full employment can be ensured by an appropriate policy on monetary and similar matters have a large following, it is only to be expected that hopes of great peacetime prosperity should be widespread. If we assume, as seems to have been the case so far as the figures can be judged, that during the later years of the Second World War nearly half the total output of American industry was devoted to war uses, then at first sight it appears that full employment during peacetime would make it possible to push up ordinary consumption to nearly double what it was during the war and the years immediately before it.

But we must avoid exaggerated hopes. A considerable amount of what is classified as "war production" has its counterpart in peace. Soldiers may wear special clothing and eat food different from that which they consume in peacetime but nevertheless they wear clothing and eat food of some kind when they return to civilian life. Secondly, America in part consumed its capital during the war, in the sense that such goods as automobiles and houses were used as they were without major alterations or replacements. This cannot continue. America must replace in a normal year what it wears out in that year or its equivalent, if production and consumption are to continue satisfactorily. Thirdly, probably most workers worked at a rate which they could not maintain for a long period without breakdowns in health or morale. Certainly most Americans worked harder than they would care to do permanently, if they wish to maintain a satisfactory balance between work and leisure. Fourthly, America during the war consumed her natural resources at an alarming rate. For instance, it has been said that the rich iron ore deposits of Minnesota, on which a large part of modern American industry has been built, would be exhausted in about ten years if the wartime rate of consumption were to continue, while a considerable part of the oil reserves would be consumed in a fairly short period. History shows many examples of such estimates proving unduly pessimistic; but none the less it is true that exploitation of natural resources has gone on at a rate which is alarming to those who concern themselves with the future. Many people are so optimistic that they believe that additional resources will be discovered or developed from time to time at a sufficient rate to compensate the exhaustion of those which are being exploited at the present time but one has need only to visit a derelict mining town to be assured that this is not necessarily the case. Lastly, it has yet to be decided how much war

production is to be continued in peacetime. If America hearkens to some of its advisers, evidently there will be a great deal.

This last factor is imponderable. At present, men are fearful of each other and are wondering whether it may not prove that, in the modern war machine, like Frankenstein, they have created a monster that will destroy them. The demonstrated vulnerability of large cities to air attack, especially since atomic bombs were employed in Japan, has led to suggestions that homes and factories should be scattered over the country and even in certain cases put underground. Some of the economies of large-scale manufacture, and of the transport savings that follow from the close proximity of associated industries and markets, will be lost in this case, while relocation undertaken more speedily than existing equipment wears out will itself be costly. Continued heavy military expenditures are advocated. If such programs are carried through, it seems likely that, in protecting themselves and their wealth, Americans will sacrifice much of the wealth that they think requires protection, a truly paradoxical result.

But developments may take a different course. Amity between the nations may permit full advantage being taken of international specialization in production. In this event, with modern techniques and granting that an appropriate monetary policy can secure conditions of reasonably full employment, America can look forward to a volume of output of consumers' goods which, if not as high as some enthusiasts have suggested, yet is well in advance of anything experienced hitherto.

SUMMARY

This chapter studies several problems of contemporary interest. What is the proper sphere of government in a mixed economy? Can anything be done to ameliorate the situation

arising because factor-incomes in an exchange economy take no account of family obligations? What are we to think of social insurance? What is the most satisfactory population? Last, and perhaps most important, what is economic progress and how far can it be carried?

EXERCISES

1. Ask your librarian to refer you to a source of information on the social insurance laws of your state. List the salient points.
2. Note how many children your grandfathers had and how many there are in your own family. Note similar information regarding any other family over two generations.
3. Ask any students you know who pursued their studies in the accelerated programs of the war years whether they would advocate such a program as a regular matter. Ask anyone you know who worked in a war plant during the Second World War whether he would like to work at the same pace regularly.

PROBLEMS

1. Would you advocate for the United States a scheme of family allowances such as has been introduced in Canada and is mentioned in the text? If so, how high would you place the benefits? Why?
2. In an unemployment insurance plan, would you support a flat rate of premium and benefit for all who are included, or would you vary the premium and benefits according to the ordinary wage or salary of the contributor? Why?
3. Bearing in mind the fact that technical advances give mankind a choice between more goods and more leisure, would you prefer more leisure to more goods in America at the present time?

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